

Railway Age Gazette

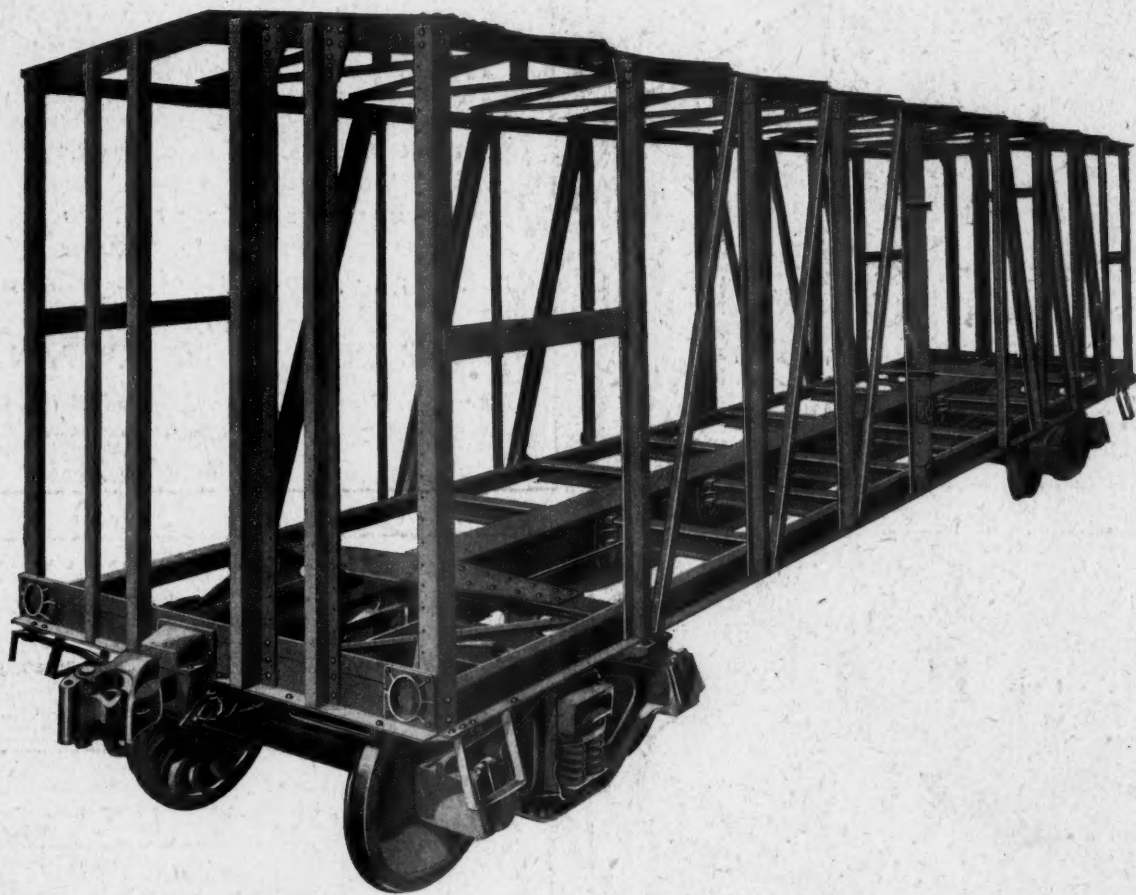
SECOND HALF OF 1916—No. 11.

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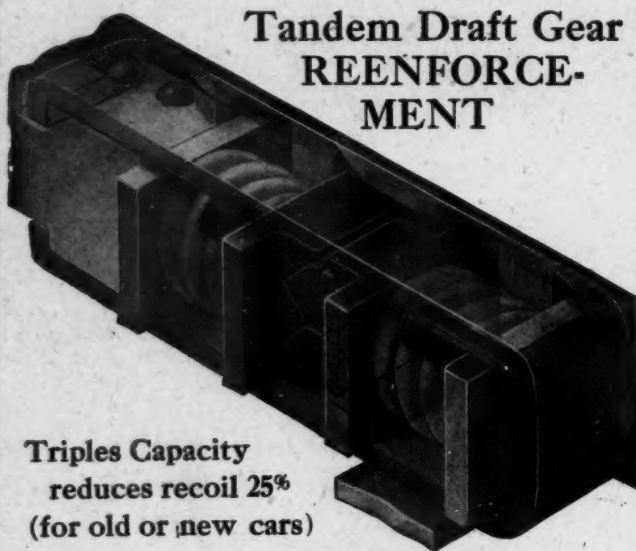
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Railway Age Gazette

Volume 61

September 15, 1916

No. 11

Table of Contents

EDITORIALS:

Opening of Our Washington Office.....	439
The Trainmaster's Responsibility.....	439
Train Shed Supports Between Tracks.....	440
The Quebec Bridge Disaster.....	440
Relation of the Stores Department to the Mechanical Department.....	440
The Eight-Hour Day in Other Industries.....	441

NEW BOOKS

LETTERS TO THE EDITOR:

Effect of An Increased Demurrage Rate; George Hodges.....	442
Train Despatcher Criticizes False Economy.....	442
The High Cost of Expediency.....	443

MISCELLANEOUS:

*New Lehigh Valley Terminal at Buffalo.....	445
---	-----

Congress and the "Eight-Hour" Law.....	450
The Federal Bill of Lading Law.....	451
*The Elsmith Holder and Writing Frame.....	452
To Investigate Transportation Facilities for Military Purposes.....	452
*Caboose for Nashville, Chattanooga & St. Louis.....	453
*Collapse of the Quebec Bridge.....	456
Comparative Summary of Freight Cars in Service.....	456
Measures for the Improvement of L. C. L. Service.....	459
A Minister's View of the Recent Wage Controversy; Rev. Charles K. Carpenter.....	462
*New Central Railway Station in Leipsic.....	464
*Recent Baldwin Locomotives for Export.....	465

GENERAL NEWS SECTION..... 469

*Illustrated.

OPENING OF OUR WASHINGTON OFFICE

THE city of Washington has become within recent years a source of a large amount of important news relating to railway matters. As the Simmons-Boardman Publishing Company now publishes one weekly paper, the *Railway Age Gazette*, and four monthly papers, the *Railway Mechanical Engineer*, the *Railway Maintenance Engineer*, the *Railway Signal Engineer* and the *Railway Electrical Engineer*, it has become financially feasible for us to establish in Washington an editorial office to cover all developments in the national capital which interest and concern the readers of these publications. Therefore, we have opened a new office in rooms 64 and 65 Home Life building, Washington, D. C.

We regard this as one of the most important developments that have taken place in trade journalism in recent years. The course of events at Washington has been rapidly growing in interest and importance to all classes of American industries, but this company is, we believe, the first one devoting itself exclusively to the publishing of trade or technical papers which has opened an editorial office at the national capital and placed a member of its own staff in charge of it.

The Washington editor of the *Railway Age Gazette* and other Simmons-Boardman publications is Harold F. Lane. Mr. Lane has had a long and valuable experience in railway newspaper work, and has a wide acquaintanceship among railway officers. He entered this line of activity naturally, since he is a son of Francis W. Lane, formerly editor of the *Railway Age*. Immediately after his graduation from Dartmouth College he became connected with the editorial staff of the *Railway Age* and the *Electric Railway Review*,

then published by the Wilson Company, Chicago. After the consolidation of the *Railroad Gazette* and the *Railway Age* into the *Railway Age Gazette* he became railroad editor of the *Chicago Tribune*, a position he held for four years. In January, 1912, he joined the editorial staff of the *Railway Age Gazette* in Chicago, where he was located until his recent transfer to Washington. Throughout his connection with this paper he has specialized on such subjects as traffic, the labor situation and government regulation, and he is, therefore, especially equipped by virtue of his training and broad knowledge of railway economic matters to present and discuss the developments at Washington affecting railroads.

His long connection with railway journalism has also given him a working knowledge of the more technical departments of the railway business, and he will therefore be almost as much at home in covering developments in such technical departments of the Interstate Commerce Commission as its locomotive inspection bureau has in dealing with the commission's regulation of rates.

The Simmons-Boardman Publishing Company hopes and expects that by establishing this editorial office in Washington and placing one of its most experienced and competent men in charge, it will be able to render the readers of all its publications a greatly improved service.

The letter from an ex-trainmaster printed in another column is a present-day picture. It is drawn in pretty bold lines, but a level-headed superintendent, to whom we have shown it, says it is true to life. The wrong things shown in it are not new, but they need to be more carefully looked at than they usually are. He says some of the absurd allowances made to the trainmen tempt a superintendent—or a trainmaster—to tear his

The Trainmaster's Responsibility

hair; but he does not do so; he girds up his loins to work harder than ever for his ideal—good and economical service. And whether the new law stands, and all plans have to be adjusted to one standard—that of hours—or the courts come to the rescue with a rule of reason, permitting trainmasters to put a premium on real efficiency, the underlying duty is the same. The master must keep his equilibrium and aim straight ahead, even if half his men go crazy. One chief despatcher, a month ago, gave notice that if the brotherhoods should win their battle, he wanted to be transferred to another job; the lazy, the overbearing and the tricky were already worrying him all he could bear. But, he, the trainmaster who knows the difficulties of the problem, is the very one on whom the superintendent ought to be able to depend for a leader in a fresh campaign. Individual efficiency of individual trainmen remains the goal and no amount of dust must be allowed to obscure it. Meantime, the railway managements of the United States have an imperative duty to perform, and that is to recognize the loyalty and the efficient work of the officers in the subordinate ranks, such as trainmasters, roadmasters, road foremen of engines, etc., in some more substantial manner than by mere words. In many cases locomotive engineers and conductors already are receiving higher wages than trainmasters, roadmasters, road foremen of engines, and even in some cases than superintendents, and if the engineers and conductors get the raise in wages recently decreed by law the situation will be made still worse. If those in control of the management of the railways continue to let such a condition exist they will be guilty of base ingratitude and of great folly. The policy which has given rise to this condition penalizes loyalty and puts a premium on disloyalty; it tends to break down esprit de corps and to destroy efficiency, and it ought to be changed, and changed now.

An interesting development in the design of the new passenger station of the Lehigh Valley at Buffalo, N. Y., described in another column in this issue, is the placing of the supports for the Bush train shed between the tracks rather than in the center of the platforms as has been the more common practice up to this time. This offers an interesting contrast with a train shed of the same type which is now being built at the new Lackawanna station a few blocks distant, where the supports are placed in the platforms. While the design adopted by the Lehigh Valley involved a considerable change in the structural details of this type of train shed the removal of the center obstructions from the platforms is of obvious advantage. This is particularly true where it is necessary to truck baggage and express on the same platforms used by passengers going to and from trains, for the platforms must be of sufficient width to provide ample clearance for trucks on each side of the posts, which clearance must be increased under the increasingly common practice of using motor trucks hauling several baggage or express trucks in a train. It is, of course, necessary to increase the distance between the tracks to permit the placing of the supporting posts for the train shed. However, clearance standards out on the line can be encroached upon at such a location because of the absence of any necessity for an employee to be upon the side of a car passing into the station. Thus the track centers were established at 14 ft. 8 in. in the Lehigh Valley station as compared with 13 ft. in the adjacent station of the Lackawanna, while the platforms were reduced from 20 ft. with the center platforms to 14 ft. 2½ in. at the former station. This decrease in the width of the platforms effected a net saving of approximately 4 ft. for each group of tracks, an important consideration in most terminals with their high land values.

Train Shed Supports Between Tracks

A second disaster, in what has been one of the most tragic chapters in the history of bridge engineering, took place on the morning of September 11, when the suspended span of the Quebec bridge dropped into 200 feet of water while it was being raised into what was to be its final position between the two gigantic cantilever arms that reach out from each side of the river. Nine years previous, on August 27, 1907, the world was shocked at the news of the failure of the first attempt to erect one of the world's greatest bridges at the same site. The confidence of the public in the engineering profession was seriously shaken, and not entirely without justice, for subsequent investigation proved that the real cause for this first disaster arose from a disregard or indifference in some quarters for what were then considered certain theoretical refinements of detail that were designed to insure a unity of action in the built up members. This lesson has been thoroughly learned, although dearly bought and nearly a decade of courageous, thoughtful and painstaking effort have been expended in a renewed attempt to complete the bridge. Then, with the goal actually in sight and with the scheme of erection that involved a most spectacular and unprecedented feat, the builders of the new structure were doomed to bitter disappointment because of a second failure. Compared to the collapse of 1907 this later mishap is inconsiderable, both as to the loss of life which it entailed and as to the financial loss, and it is doubtful whether the completion of the bridge will be delayed more than a year.

The Quebec Bridge Disaster

RELATION OF THE STORES DEPARTMENT TO THE MECHANICAL DEPARTMENT

IN a paper on the "Determination of Efficiency in the Supply Department," which was presented by H. C. Pearce, general purchasing agent of the Seaboard Air Line, at the April meeting of the Richmond Railroad Club, and abstracted in the August 4 issue of the *Railway Age Gazette*, page 200, the author takes the mechanical department to task for keeping too much material on hand with which to meet its needs. He refers to the staff meetings of the local mechanical officers at which lists of material delaying their work are made, as "nothing but a fence for excuses."

There is much in this statement, and Mr. Pearce deserves commendation for calling attention to the situation. But there is something to be said on the other side of the question. Mr. Pearce adds: "The policy of encouraging officers and employees to make complaints regarding shortage of material is wrong, and has probably done as much as any other one thing to encourage unnecessary investment in material." And further on he states: "Instead of men holding meetings to report and complain of shortage of material their efforts would be better directed toward ways and means of getting along with what they have."

It is the duty of the mechanical department to keep the cars and locomotives in service and to make repairs with the least possible delay, in order that the railroads may properly and expeditiously handle the one thing they have to sell—transportation. If the mechanical department is handicapped by the lack of proper material delays will be occasioned, and at times of car shortage and a rush of business these delays may be expensive. During periods of heavy traffic the earning power of a locomotive will be between \$100 and \$200 per day and sometimes more. It would be a serious mistake therefore to hold this equipment out of service for too long a time. The stores department should see that the mechanical department is supplied with its needs in order that quick repairs can be made.

The whole matter presents a need for co-operation. Both the stores department and the mechanical department should

remember that they are working for a common purpose. Each is dependent upon the other for its success. The mechanical department should co-operate with the stores department to keep the amount of material carried in stock down to the lowest possible minimum, and the stores department should, as its first duty, see that the mechanical department is supplied with the proper kind and amount of material. A "showing" by the stores department can be made at the expense of the mechanical department, and a "showing" by the mechanical department can be made at the expense of the stores department, and in either case at a direct loss to the railroad as a whole. It is only by getting together, each assisting the other, that the most economical results can be obtained. "Rawhiding" of one department by the other will not lead to the proper co-operation.

THE EIGHT-HOUR DAY IN OTHER INDUSTRIES

PRESIDENT WILSON, in his recent address to Congress asking for legislation to avert the strike, said that "the preponderant evidence of recent economic experience spoke for the eight-hour day. . . . The whole presumption of modern experience would, it seemed to me," he said, "be in its favor, whether there was arbitration or not."

Whatever economic justification there may be for an eight-hour work day in some kinds of work is no argument for its introduction in railway train service, where, as everyone knows, it is impossible to divide the work into fixed periods of time. Train employees must remain with their trains from one terminal to another; they cannot be released wherever they may happen to be at the expiration of a certain number of hours, and different kinds of trains naturally require different lengths of time to complete their runs. A local train with many stops to make for loading or unloading freight may take 10 or 11 hours to make a run that a passenger train will make in three hours and a through freight train in seven hours.

But, as a matter of fact, every one also knows that the eight-hour workday has by no means been generally adopted in other industries, even under conditions where it would be physically possible to do so. A bulletin recently issued by the United States Bureau of Labor Statistics gives the hours of labor per day fixed by the union scales in 11 trades and in 47 cities located in 32 states, a total of 5,548 scales or contracts. This shows that eight hours is the prescribed day in only 2,992 or 53.7 per cent of the whole number of cases reported. In 2,016 cases the prescribed working day is nine hours or over and in 814 cases it is ten hours or over. This would seem to demonstrate that the eight-hour workingday does not have the sanction of general acceptance even in the trade union scales.

The 11 trades mentioned are: bakery trade; brewery and bottling house workmen; building trades; chauffeurs, teamsters and drivers; freight handlers; granite and stone trades; metal trades; mill work; printing and publishing, book and job, and printing and publishing, newspaper; and soft drink establishments.

Other published reports of the same bureau show the hours of labor in eight different industries, covering the work of 317,005 employees, for 1913 and 1914. A compilation of these reports shows that of the total only 8,259, or 2.6 per cent, worked only 48 hours or less per week; while 36,426, or 11.5 per cent, worked over the 48 hours and less than 54 hours; 114,442, or 36.1 per cent, worked 54 hours; 91,222, or 28.8 per cent, worked over 54 hours and less than 60 hours; 46,340, or 14.6 per cent, worked 60 hours, and 20,316, or 6.4 per cent, worked over 60 hours.

The eight industries included in these reports are cotton manufacturing, wool manufacturing, silk manufacturing, men's clothing, boot and shoe industries, hosiery and underwear, iron and steel industries, and building and repairing

steam railroad cars. These data are not for union labor alone, nor for non-union labor, but apply to the industries as a whole, including both union and non-union labor.

The available state reports on the hours of labor also indicate that the eight-hour day is by no means an established feature of industry. The following gives the results of an examination of the reports of all states that publish information on this subject:

Kansas, 1914.—46,662 men employees represented. 21.8 per cent worked 8 hours or less per day. The prevailing hours were over 9 up to and including 10 hours per day.

Kentucky, 1913.—9,869 adult male employees represented. 15.3 per cent of these employees worked 8 hours per day. The prevailing hours were from 9 to 10 hours per day.

Louisiana, 1914.—25,793 men employees represented. One per cent of these worked 8 hours per day. The prevailing hours per day were 9 and 10, mostly 10.

Michigan, 1914.—285,424 adult male employees represented. The hours for Michigan are reported as averages in each county, so that the exact number working 8 hours per day, or less, is not disclosed. The averages reported indicate the prevailing hours to be from 9 to 10 per day.

Minnesota, 1913-1914.—79,208 adult male employees represented. 16.79 per cent of these employees worked 8 hours or less per day. The prevailing hours were from 9 to 10 per day.

Montana, 1914.—13,029 male employees represented. 54.6 per cent of these worked 8 hours or less per day. The remaining employees were employed in about equal numbers 9 and 10 hours per day.

New Jersey, 1913.—242,339 adult male employees represented. 3.6 per cent of these were in industries that averaged 9 hours and over 8 hours per day. These doubtless include some who worked 8 hours or less, but their number is not separately shown. The great majority of employees worked over 9 hours or over 10 hours per day.

North Carolina, 1914.—68,299 adult male employees represented. .6 of one per cent of these employees worked 8 hours per day. The great majority worked over 9 hours and as much as 10 hours per day.

Ohio, 1914.—12,779 establishments represented. The data for Ohio show the hours by establishments, but do not report the number of employees working any specified number of hours. 19.9 per cent of the establishments worked 48 hours per week or less. The great majority of them worked over 54 hours per week and up to 60 hours per week.

Oregon, 1914.—17,568 adult male employees represented. 15.1 per cent of these employees worked 8 hours or less per day. Some additional, but unknown number, worked 8 hours, but are included among those reported as working from 8 to 9 hours, or from 8 to 10 hours. The data indicate that the prevailing hours per day are from 9 to 10.

Tennessee, 1913.—8,669 adult male employees represented. 1.6 per cent of these employees worked 48 hours per week or less. The great majority work over 54 hours per week and up to 60 hours per week.

Texas, 1914.—55,147 male employees represented. 25.7 per cent of these employees worked 8 hours or less. The prevailing hours were from 9 to 10 per day.

Virginia, 1914.—The data for Virginia are reported by establishments and indicate the prevailing hours per day, and other hours per day when they are also worked. The data as reported show that the prevailing hours for all industries as a whole were from 9 to 10 per day.

Washington, 1913.—32,149 men employees represented. 3.8 per cent of these employees worked 8 hours or less per day. The great majority worked over 9 hours and up to 10 hours per day.

In an article on the "Growth of Labor Organizations," published in the *Quarterly Journal of Economics* for August, Prof. George E. Barnett of Johns Hopkins University estimates the trade union membership in 1914 to have been about 6.28 per cent of all "gainfully employed" persons in the United States. The statistics available, therefore, would seem to indicate that the eight-hour day is a "presumption" of the unions rather than of economic experience. In any event, in view of such facts, it seems peculiarly strange that any one should contend that the question of establishing either an eight-hour workday or an eight-hour payday in train service is not an arbitrable one.

NEW BOOKS

Air Brake Association Proceedings. Compiled and edited by F. M. Nellis, secretary of the association. 262 pages, 41 illustrations, 6 in. by 9 in. Bound in morocco. Published by the association, F. M. Nellis, secretary, 165 Broadway, New York City.

This is the official report of the twenty-third annual convention of the Air Brake Association, which was held in Atlanta, Ga., May 2 to 5, 1916. It contains papers on the Slack Action in Long Passenger Trains, Best Methods of Educating Air Brake Apprentices, Care of Modern Passenger Brake Equipment, Proper Piping of Locomotives and Cars, Excess Pressure, Hand Brakes for Heavy Passenger Cars, Need of Efficient Cleaning and Repairing of Freight Brakes, Recommended Practices, and Accumulation of Moisture and Its Elimination from Trains in Yard Testing Plants.

Letters to the Editor

EFFECT OF AN INCREASED DEMURRAGE RATE

CHICAGO, Ill.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

I note in the September 8 issue of the *Railway Age Gazette* (page 394) you commented upon the performance of the California Demurrage Bureau in the release of freight cars under the \$3 rate. The following statement will compare the performance of California under the \$3 rate with the rest of the country under the \$1 and \$2 rates provided by the National Demurrage Code during the months of February, March, April and May, 1916:

	Under National Code			California rate \$3 for four months
	\$1 February and March	\$1 and \$2 April and May	Total for four months	
Cars handled	4,219,926	4,494,520	8,714,446	491,866
Cars released in 24 hrs. free time	2,626,986	2,900,337	5,527,323	388,803
Percentage	62.3	64.5	63.4	79
Cars held over free time	670,113	739,004	1,409,117	8,545
Percentage	15.9	16.4	16.2	1.74
Cars held more than 3 days over free time	182,679	186,380	369,059	858
Percentage	4.3	4.1	4.2	0.17
Demurrage accrued	\$1,422,039	\$1,963,838	\$3,385,877	\$49,128

If the \$3 rate with no "average agreement" had been in effect and produced the same results in territory under the National Code, the number of cars held over the free time during this period would have been 151,631 instead of 1,409,117, a decrease of 1,257,486 (89.24 per cent), and the demurrage charges would have amounted to \$871,878 instead of \$3,385,877—a decrease of \$2,513,999 (74.22 per cent).

I call particular attention to the percentage of cars released in the first day of free time and the percentage held over the free time, together with the percentage of cars held to exceed five entire days from time of placement.

This is the basis of our feeling that the demurrage rate should be increased to prevent the continued use of equipment as storehouses.

GEORGE HODGES,

Chairman A. R. A. Committee on Relations Between Railroads.

TRAIN DESPATCHER CRITICIZES FALSE ECONOMY

REDSTACK, Ark.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

The railroad on which I am employed is a comparatively short one, but it has a long and ambitious name; not the "New York, Mexico City & Yokohama," but about as bad as that. However, it is very up-to-date; it has a loudly advertised policy of "Safety First." Above the despatchers' table is a rather ornately designed placard bearing the advertising symbol of the company, and a safety-first motto. On the train sheet—thoughtfully placed in a space that could otherwise be used by the despatcher to much better advantage—is the same design in miniature. On the blotters which we use is printed a wordy dissertation upon the necessity of employees being safe above all other things.

Bearing this firmly in mind I safely ring the operators at Guatemala, Peking and Vladivostok to safely issue a safe train order; and it is one which conditions demand shall be longer than usual.

"Wait a minute," says Guatemala, "until I step out and see if my signal light is burning. This cross between rain-water and Scott's Emulsion that they furnish for signal oil won't burn longer than ten minutes at a time."

"I'm ready," says Peking, "but you will have to send

awfully slow, so I can bear down hard enough to get through these darned old worn-out carbons."

"Why don't you get some new carbons?" I inquire.

"Can't; on account of the war, I guess. We order three dozen every month, and get half a dozen. They're good for about three days."

"Can I put it on a '31' instead of a '19'?" inquires Vladivostok. "We're almost out of 19 blanks and I shall have to stop 262 to deliver it anyway. We haven't any hoops here and I nearly got killed trying to hand one up last night. Going to stop 'em after this. Safety first, you know."

"Why don't you get some hoops?"

"Can't. We've been ordering four every month for a year, and have written letters about them, too; but never got any except one that was sent to us Christmas. That, however, got broken Decoration day."

"Full up!" breaks in Guatemala, when I am within three words of the end of the order. "Could get the rest of it down but would have to run it into the print. These blanks aren't big enough to write the company's full name on with a stylus plain enough to be read."

"Make another, I'll send it over," I announce, comforting myself with thoughts of "Safety First" while trains wait for orders.

When I have finished this interesting process I reread a chapter or two of "Safety First" literature and wonder if the policy of the company isn't really "Safety First, but Saving First." Perhaps it is the result more of training and instinct than of a definite policy on the part of the parties concerned, but it is certainly noticeable on many railroads, that where economy and safety-first clash, economy (so-called) more often triumphs. The store and stationery departments of a railroad offer a wide field for either economy or extravagance, and the wise administration of these two departments is of vital interest to every company; but a wise administration is not one that substitutes arbitrary stinginess for intelligent judgment of requirements. It does not make a good showing in decreased disbursements, while the service on the line suffers for it.

I have never yet seen a despatcher's office where the supply of blotters, pen-points, ink, etc., was large enough to last from one requisition day to another, and I have often observed that other offices felt the pinch of the same circumstances. However, it is generally possible to beg enough advertising blotters from insurance agents and buy enough pen-points, and water the ink until it has the writing qualities of weak tea, and get through the crisis O. K., in that respect. But when it comes to economizing on train order carbons and other material vitally connected with the handling of train orders—"Safety First!" Instead of being so desperately careful that too much of such material is not furnished, some one should make it a point to see that a sufficient supply for average needs is furnished.

Mr. General Manager, please do see to it that ambitious stationers do not arbitrarily curtail such requisitions; let them cut down only after a thorough investigation shows that they are justified in so doing. An operator who turns out illegible copies of train orders through the use of worn-out carbons should not be retained in the service. There is nothing more hazardous than such an order. An adequate supply of train-order hoops should be maintained at every station. Any one who differs with me on this subject is respectfully requested to try to hand up an order with his bare hands to a train going 45 miles an hour.

Of course there is always a risk that these articles may be diverted to other uses than the ones they are intended for, and cause a big waste. The train-order carbons might be used for wrapping fresh butter, and the hoops are adapted to lassoing jackrabbits. But if there is anything in "Safety First" it demands that this risk be taken in preference to the other risks of a butting collision or of an operator being

struck halfway between the mail-catcher and the warehouse by a Pacific type while in the performance of his duties.

In this connection I wonder if there is any reason, other than that they may be a cent a million cheaper than a larger blank, why the railroad companies so religiously adhere to the use of such small train order blanks. These forms evidently were devised in ancient times when a white mule furnished ample motive power for all the trains that were run. I suppose a contract was signed that they would be used for the next ninety-nine years. Very few railroads have a train order blank long enough to contain an order of average length without cramping, despite the fact that the orders must be copied in manifold. If there is anything that should be firmly and clearly written, it is a train order.

HOMER PIGEON.

"THE HIGH COST OF EXPEDIENCY"

PEORIA, Ill., September 1.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

Anderson Pace, in an address before the American Society of Railroad Superintendents at Memphis last month on "Building a Line to the Public," reported in your issue of August 25, says: "We are far from finding our way through the woods, but we believe that there is one tool which could do more than all the rest. That tool is the organized employee. Get him on the side of the railroads; let him be our missionary, and the conversion of the public is over."

That sounds well. The half million or more members of the railroad brotherhoods could do a great deal to remove barriers and cement friendly relations between railroads and public; but what do we learn from the conditions in the railroad world at the present time? With the officers of the four brotherhoods setting a date four days hence for a general strike, to tie up the commerce of the country, to expect these men to "build a line to the public" is just as sensible as to talk of building a line to the planet Mars. A brief review of the conditions that have led to this climax will open anyone's eyes.

The brotherhoods were, in a measure, the natural outgrowth of lack of consideration by railroad managements of the past. Because of lack of foresight on the part of railway officers the wages of the organized crafts were brought up not only to a fair standard, but they were carried above that level. Year after year arbitrary allowances were granted with excessive liberality while the more loyal and unorganized forces, the monthly salaried men such as clerks, station agents and their forces, were neglected and left to work Sundays and into the night and without overtime, in order to keep up with their work.

Annual passes were granted to members of brotherhoods and their families, at the same time such courtesies being refused to many of the unorganized men, and even to chief clerks in the superintendents' offices.

The disrespect for local authority, and consequent disloyalty, has been bred by the reinstating of men discharged for good and sufficient cause, on request of brotherhoods. In short, the managements of many roads are guilty of a culpable lack of effort to conserve their resources in loyalty. This has been done in the name of expediency; getting by today at the expense of tomorrow.

Who has the credit of getting all these concessions for the organized forces, as the rank and file see it? Their officers! Would they have been treated thus fairly had it not been for the organizations? In answer to this they point you to the unorganized men—clerks, section foremen, train despatchers, agents, roadmasters, master mechanics—working for 30 to 40 per cent less wages. Roadmasters receive about half the salary of a locomotive engineer. Master mechanics and train masters 20 to 30 per cent less. Chief clerks and accountants often less than a brakeman or a fireman. What is the lesson

the masses in the brotherhoods get from this anomalous situation? They can see that the railroads are unfair and do not appreciate good service and loyalty when they have it. Therefore do not do anything that you can shirk; or, in any line, any more than you have to. Penalize the company every time you get a chance. Simply keep in to clear, and seniority will take care of you.

The officers of the brotherhoods explain to the men and "produce the goods" in continued increases of wages, arbitrary allowances, reinstatement of men discharged for good cause, and reversal of rulings by trainmasters and superintendents. This is the result in some cases of a very obvious cause, namely, promoting to official positions men from the ranks of the brotherhoods, who are unfit for supervising positions. These men keep the brotherhoods mobilized to build a line to the railroad's treasury.

Every one of the many arbitrary allowances which have been granted gradually and insidiously are illogical and even vicious in character. They are subversive of discipline. On those roads which are the worst tied up with these arbitrary allowances, discipline is all but gone, so far as relates to a large percentage of the men. Right here is where hazard in operation comes into the reckoning.

Conceive, if you can, how any man sincerely interested in his company and his discipline ever justified himself in tying the hands of the operating officers by agreeing to the following arbitrary allowances, now in force on some of the roads:

"Terminal time."—This means that when for any reason a train doesn't leave a terminal within one hour of the time set for departure the crew is paid one hour arbitrarily in addition to a full day, which includes the same hour; and on the other end of the run another arbitrary hour is added if held out of yard 30 minutes or more.

Running for coal or water.—In the event of any engine running low on either coal or water, making it necessary to leave the train and take the engine light to a water tank or a coal chute and then return for its train, even though they may be only a quarter of a mile from chute or tank, a minimum of ten miles or one hour is paid, in addition to regular time and mileage. The same concession applies to a train that doubles a hill, and even to the crew of an engine or train that helps a train ahead over a hill; and in some cases it is now being applied in case of train parting.

Automatic release.—A crew in freight service is automatically released, completes trip or day on arriving at any established terminal or division point, with no exceptions, no matter what the emergency or how much the company is losing by reason of the emergency. For instance, a washout makes it necessary to detour traffic, and in so doing the trains are moved to a terminal or division point on an adjoining division over a cut-off or a short route; and no matter how short the distance, be it only 10 miles, the crew is paid a full day or 100 miles for each move. It may make a round trip, taking a train to the terminal on the other division and return with only engine and caboose, doing it all inside of two or three hours. Two full days must be allowed, one for each single trip. If a second round trip is made these men are paid for four full days. This is actual practice on some roads.

Crews in work train service and formerly paid by the hour and protected by the minimum day, are now paid mileage to and from point of work and, in addition thereto, actual hours while in work service. This often means pay for a day and a half or two days for one day's service. Work train crews stationed at outlying points, gravel pits, etc., are paid an arbitrary hundred miles or full day for bringing their engines to a terminal after completing ten hours in work service, in addition to the full day in work service, no matter how short the distance, or how short the time.

Crews in work service, used in an emergency to move a train of revenue freight, no matter how short the distance or

few the hours, are allowed a full day for each class of service.

Crews in through freight service are allowed arbitrary time for what is termed miscellaneous work. For instance, a crew is instructed to stop at a certain point and allow section men to unload a car of ballast that may be in the train—possibly in a dump car requiring only 5 or 10 minutes to throw the latch and let the ballast run out (and this is done by the section men)—an additional or arbitrary hour is allowed.

Crews in this service are allowed arbitrary time for placing cars of coal on the coal chute (because of accident to switch engine or other emergencies) when perhaps the job doesn't take 10 minutes. And in all this so-called miscellaneous service the hour or hours as the case may be are allowed in addition to a full day's pay, even though the trip is completed in less than ten hours, as is very often the case. Train crews in through freight service are allowed local freight pay when as much as two hours' switching is done between terminals. Local freight pay is allowed for the entire trip, even though it is a fast freight run with a light train, making 150 miles in ten hours or less. Thus they get a day and a half at the local freight rate. And they get it even though they did not actually consume two hours doing the work, since there can be no check on the time unless a trainmaster or other officer in authority rides the train. Can you imagine how any officer who was sincerely interested in his road—or his discipline, or even the men themselves—in his right mind, ever bound his company by such an agreement as this? It is in effect an invitation to kill time and misrepresent facts, to secure increased pay. This is a very recent concession.

Another recent concession is that engines shall not be doubleheaded except going to and from the shops for repairs. In transferring an engine from one point to another we can not doublehead, even though the train on which the engine might doublehead is not given increased tonnage; the hazard in operation must be increased to the extent of running this additional train, in order to give a conductor a job. The above are only some of the more vicious arbitrary allowances which I recall. There are still others, and numerous other ways by which the organizations appropriate the company's money by means of these vicious codicils to the working agreement which have been put through, one at a time, as the grievors have found an easy manager—one of the smooth, diplomatic kind who often boast how nicely and easily they get along with the men.

To avoid reversals and criticism by this type of officer many superintendents have evidently taken the same line of "easy resistance," and thus, on many roads, the officers have greatly assisted the brotherhoods in bringing about the situation which we see today. It is wholly natural that the gates of promotion are closed to the division officer who can not get along smoothly with the brotherhood men—that is, the local brotherhood officers.

It is this puerile type of officer who panders to the brotherhoods and neglects to fight for the unprotected 75 to 80 per cent, that is largely responsible for the fear evidenced by some of the executives as well as the public, as to the great power of the brotherhoods.

They were bluffing again this time. The older ones were from the start against making the bluff and many would not have gone out. They know that there is no great secret in running a locomotive and still less in the other four positions, and that men could and would have been quickly recruited and trained from other ranks.

It is to be hoped that the presidents of our railroads have got their eyes open a little bit through their recent experience. Perhaps they will do a little organizing themselves, and put a stop to the bargain festivals between popularity-seeking or sympathetic officers and the leaders of the brotherhoods. The actions of some of the officers at times would in-

dicade that they were trying to get in line for a soft political berth sometime, somewhere. I wish it were possible to trace back and identify the road or officer that first granted some of the most vicious of the arbitrariness, and thus place the responsibility where it belongs.

The executives must not only federate, they ought to see to it that no more of these unbusinesslike allowances are granted. Unless a majority of the roads will agree to an allowance it should be held questionable. The president should stop swapping between the officers and the brotherhoods. Anyone can see that not one of these arbitrary allowances could have been forced on its merits. No good business man would have allowed the brotherhoods to slip them over.

To build the line to the public don't count on the modern union man; he is too busy building a line to Congress. Your best builders are the neglected 80 per cent—the station agent, for instance, who is on duty all of the time and whose force as well as salary has often been reduced by the officers popular with the brotherhoods. The chief clerks and other clerks, the chief despatcher, the trainmaster, the master mechanic, the roundhouse foreman, the roadmasters, the section foreman, and many others—those who have been told year in and year out that the situation is such that "the management can not consider increases in force or salary at this time"—give this class a little relief from the heavy grind. Give them increased help where needed, and a little more encouragement and appreciation. They will rebuild the line to the public which has been torn down by the organized forces. More than that, they will run the trains when the walkout comes.

A man can not be thoroughly loyal unless he sees substantial evidence of appreciation; mere words are not sufficient. "The world cares little for what a man utters that is not distilled in the alembic of his life." Verily; the law of compensation never rests; the present climax is one of the back strokes. About 20 years ago a large percent of our population endeavored to remedy deficiencies in our monetary system by putting a dollar mark on 50 or 60 cents' worth of silver; but experience has shown that under the law of supply and demand the scheme won't work. Our railroads, for some years, by measures of "expediency" have tried to stamp 50 to 75 per cent of efficiency of labor rendered by the organized man with a 100 per cent fiat; and then have always been disappointed. But even yet they are endeavoring to apply the same principle conversely with respect to some of the unorganized forces, i. e., stamping a dollar's worth of efficiency with a 70 or 80 cent stamp. They are continually losing on this proposition, but cannot or will not see it. Verily the cost of expediency comes high.

AN EX TRAINMASTER.

THE ENGLISH RAILWAY LABOR SITUATION.—In October last the railway companies increased the war bonus paid their men from 3s. (72 cents) to 5s. (\$1.20) per week and that paid to boys from 1s. 6d. to 2s. 6d. The men are now asking for 10s., and J. H. Thomas, the assistant secretary of the National Union of Railwaymen, justifies the men's undertaking, made in October, not to ask for more money, being broken, because the promise was made under protest and after the companies' representatives had stated that, as common-sense men, they would be prepared to realize changed circumstances if the war went on indefinitely. Mr. Thomas showed how the increased earnings of dockers and munition workers had rendered the position of railwaymen doubly hard. In the vicious circle which had been created wherever wages increased, the shopkeepers and everybody else immediately set out to increase prices. The railwaymen also had to pay higher prices, but they could not go to the dockyards or the munition works, because the companies would refuse them leaving certificates.

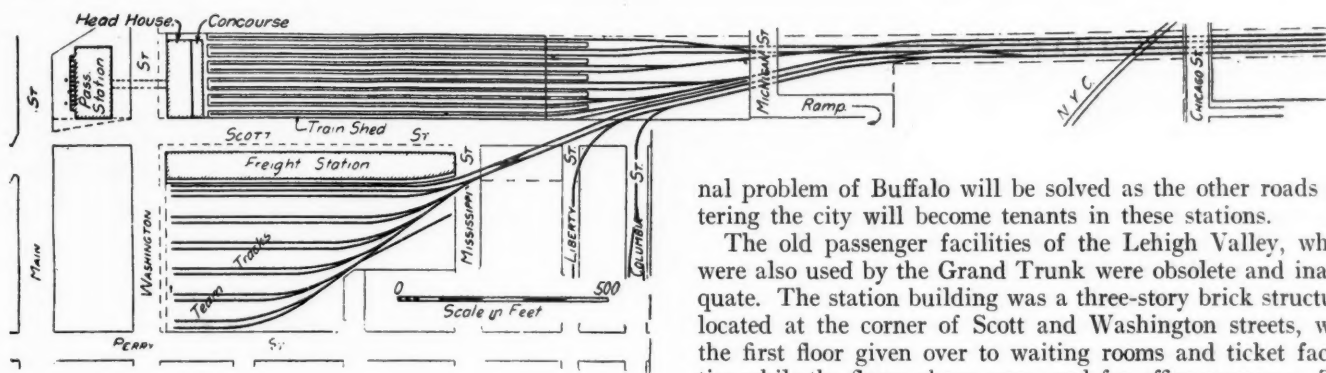
New Lehigh Valley Terminal at Buffalo

Complete Passenger Facilities With Original Features
Now Being Completed. L. C. L. Freight House Built

THE Lehigh Valley terminal improvements at Buffalo which involve an outlay of approximately \$5,000,000 for the properties and buildings are nearing completion. The project includes a new passenger station, a new freight house and yard and a new four-track main line approach to the terminal district. The freight layout was placed in service last December, and the passenger station, while not completed in all details, was opened for traffic on August 29.

The construction of this terminal is a result of negotiations

finally rejected as impractical. The problem of the improvement of the separate terminals was next considered and, in order that the possibilities might be fully investigated, a terminal commission was created by an act of the New York state legislature to carry on the negotiations with the railroads. As a result, in addition to the Lehigh Valley, the Lackawanna is completing a new passenger terminal and plans for a new New York Central station are under consideration. When these three stations are completed the termi-



Track Layout at the New Terminal

that have been carried on between the city of Buffalo and the railroads for several years with the purpose of replacing the old stations which have long been unsatisfactory and inadequate. Buffalo is a terminal for all of the twelve roads entering the city except the New York Central and the Erie. Four old and inadequate stations owned by the New York Central, the Erie, the Lehigh Valley and the Lackawanna have served these roads. The first three are located within a radius of two

nal problem of Buffalo will be solved as the other roads entering the city will become tenants in these stations.

The old passenger facilities of the Lehigh Valley, which were also used by the Grand Trunk were obsolete and inadequate. The station building was a three-story brick structure, located at the corner of Scott and Washington streets, with the first floor given over to waiting rooms and ticket facilities while the floors above were used for office purposes. The main entrance was from Washington street with the exit to the train shed in the rear, which was served by six stub-end tracks. A double track main line approached the station at street grade, crossing Louisiana, Chicago and Michigan streets, and had a lengthwise occupancy of 900 ft. in Scott street. In the new layout this line has been abandoned from a point approximately one mile east of the terminal and Scott street has been restored to use as a public thoroughfare. The old line is replaced by a four-track line located entirely on property purchased for this purpose with all intersecting



Interior of the Freight Station



Concrete Piles Cast on the Ground

blocks, while the Lackawanna is removed a considerable distance from the others. Because of these conditions a large number of passengers transfer from one terminal to another in addition to a large number who are required to wait for connecting trains, both of which make necessary commodious waiting room facilities in the various stations.

A union station scheme was originally presented, but was

streets carried over the tracks on viaducts. The construction of the new line was complicated by its proximity to the New York Central which adjoins the new location on the north. The intersecting streets had previously been carried over the New York Central tracks on viaducts and to utilize the new location it was necessary to continue these structures over the new line and provide new approaches. A further complication

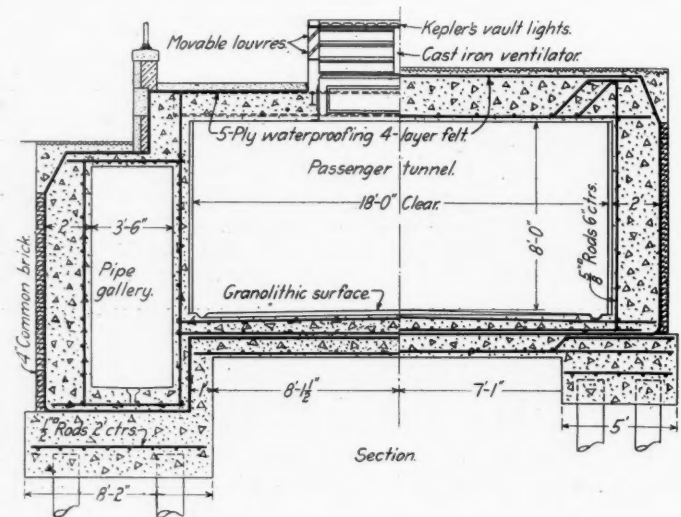
was caused by the streets that parallel the tracks, it being necessary to provide access to the viaducts from the streets and also from the New York Central freight house. The situation was met by constructing inclines connecting the two levels. This portion of the layout was completed before work was started on the terminal buildings.

The new passenger layout includes the new station located between Main, Washington, Quay and Scott streets and the headhouse and train shed located on the site of the old station at the corner of Washington and Scott streets. The separation of the station building from the headhouse was made necessary by the refusal of the city to close Washington street. Because of this somewhat unusual condition it was necessary to construct a reinforced concrete tunnel under Washington street to connect the waiting room of the station with the concourse in the headhouse.

THE PASSENGER STATION

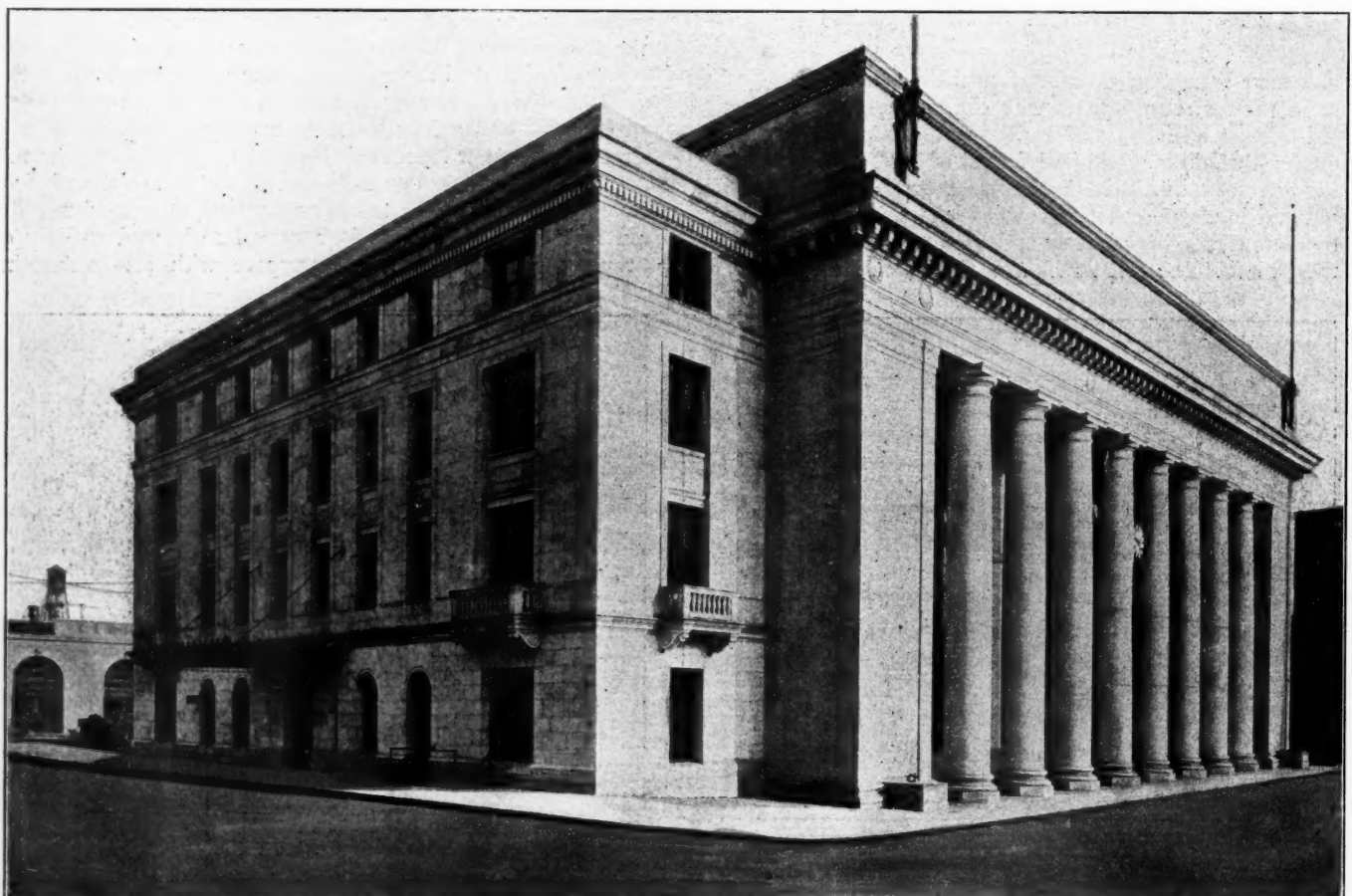
The station building is a four-story structure of gray Indiana lime stone with a granite base and terra cotta trimmings. It has a frontage of 164 ft. on Main street, which is the principal thoroughfare of the city, and extends back 102 ft. along Scott street. It is set back 50 ft. from Main street to provide space for approaches. The principal entrance is from Main street and is accentuated by a colonnade of eight columns backed by three great arches. This entrance opens directly into the waiting room, 82 ft. by 102 ft. in area and extending the full height of the structure. Directly in front of the entrance and on the opposite side of the waiting room is a ramp leading down to the tunnel under Washington street,

waiting room. A hall way off this lobby leads to the elevator and stairs to the floors above. The ticket office is located to the left of the ramp on the Washington street side



Cross-Section of the Subway Connecting the Passenger Station and the Concourse

of the waiting room and the parcel room and news stand are at the right of the ramp. The telephone and telegraph facilities, smoking room, woman's room and the toilets are on the



Main Street Elevation of the Passenger Station

which connects the waiting room and the headhouse. The restaurant and the invalids' room are located on the Quay street side of the waiting room and on opposite sides of a lobby leading from the Quay street carriage entrance to the

Scott street side. The floors and wainscoting in the waiting room are of marble. A flat plaster finish is used on the walls, and the ceiling is finished with ornamental hung plaster. Light is admitted by three large arched windows on the Main

street side and smaller windows on the other sides. The artificial lighting is both direct and indirect. The direct light is furnished by two suspended chandeliers and seat lights, and the indirect by wall lights.

Record and storage rooms are provided in the basement.



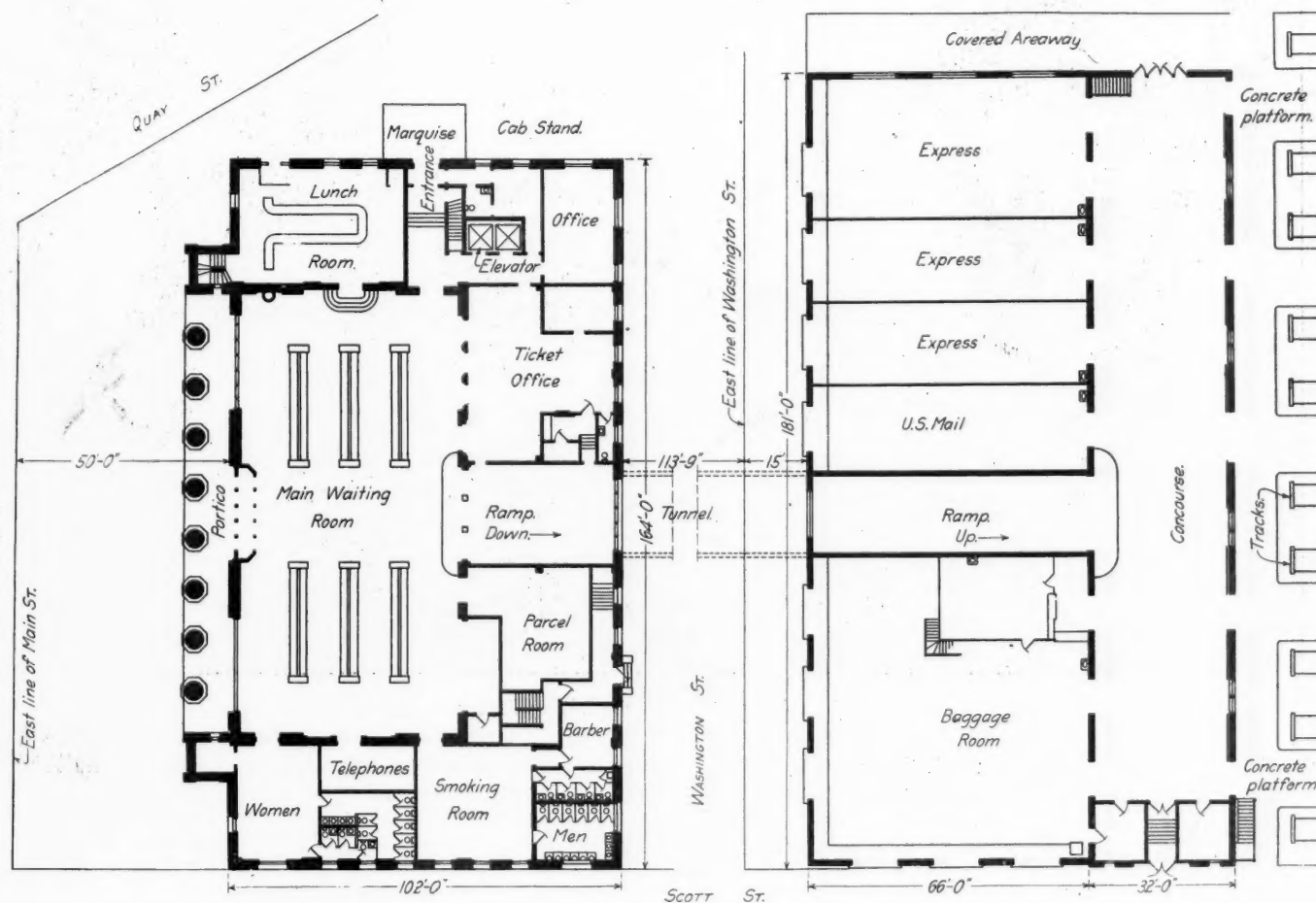
Waiting Room Entrance to the Subway

The mechanical and electrical equipment is also located in the basement, as is the heating plant which will furnish heat for the entire passenger layout, including passenger cars when

which passes under the building on a slight skew, with the flow line above the elevation of the basement floor. The sewer was protected during construction by two lines of Lackawanna sheet piling. The basement floor is carried over the sewer by a reinforced concrete slab with ramps between the two levels. The foundation walls for the station are carried over the sewer on plate girders 8 ft. 2 in. in height and 42 ft. long. These girders are supported on reinforced concrete piles as is the entire foundation wall of the station. These piles were cast on the ground and were driven to rock, 35 ft. below street grade by means of a jet and steam hammer. A total of 560 piles was used in the passenger station foundations.

On the Quay and Washington street sides of the station is a paved area way for parking public conveyances with a drive to the Quay street entrance which is covered by a broad marquis serving as a porte cochere. A second drive serves the main entrance with a platform between it and the street for passengers waiting for street cars. This platform is elevated above the drive and protected from it by a concrete railing.

The reinforced concrete tunnel under Washington street provides a passage way for passengers between the waiting room and trains. This tunnel has a clear width of 18 ft. and 8 ft. clear head room. A pipe gallery $3\frac{1}{2}$ ft. in width adjoins the tunnel and is separated from it by a 10 in. concrete wall. The entire structure is supported on wooden piles driven to rock and is waterproofed by four layers of felt and one ply of reinforced felt, backed by a 4 in. wall of



Floor Plan of the Station and Concourse

parked in the train shed. The second and third floors are utilized for office purposes.

The construction of the station building was complicated by the presence of the Hamburg canal sewer, 28 ft. in width,

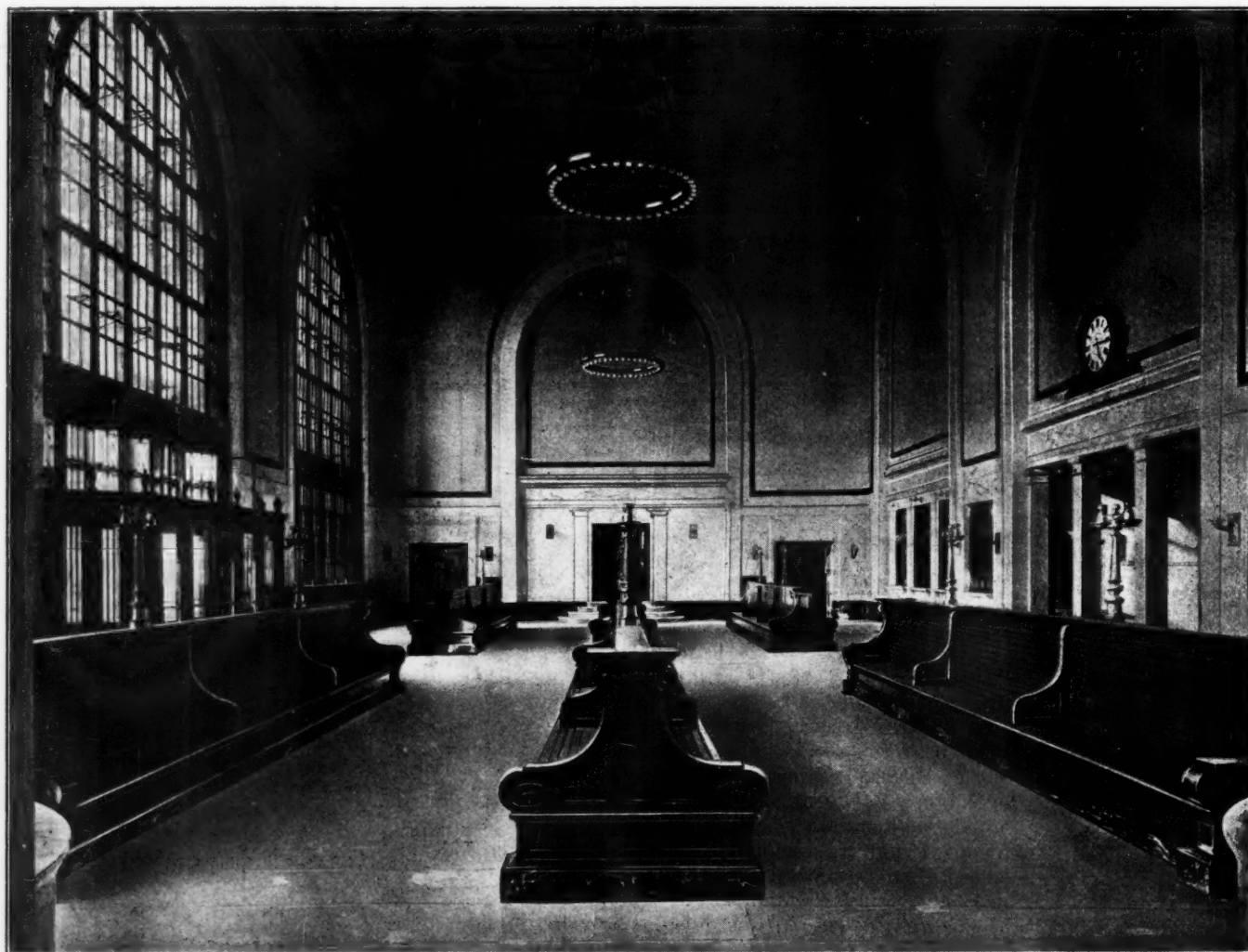
common brick with joints laid with asphalt. Cast iron ventilators and Keppler vault lights are provided. The approaches to the tunnel are on 10.5 per cent grades at each end. The entrance to the ramp at the waiting room end con-

sists of a flat arch supported on marble pillars. Five doors open from the ramp into the tunnel. These doors will remain open except when strong drafts are created and when it is necessary to control the crowds.

The headhouse is a two-story, steel encased structure harmonizing with the station building in architectural design. It has a frontage of 181 ft. on Washington street and extends 66 ft. along Scott street. The first floor is devoted to express, mail and baggage. The express rooms with 4,600 sq. ft. of floor space are located in the west end of the building; a baggage room with 4,300 sq. ft. of floor area occupies the Scott street end and the United States mail room is placed in the central portion of the building and adjoins the ramp from the tunnel. On the street sides of the baggage room an elevated platform 12 ft. in width and 3 ft. above the floor level is built. Scales are provided in this platform and in

ing room facilities for passengers not desiring to enter the main station. On the Scott street side are the offices for the baggage master and station master. Exits from the concourse are provided to Washington and Scott streets.

The train shed is 195 ft. wide and 842 ft. in length and providing for 10 tracks adjoins the concourse. The shed is the Bush type of concrete and steel with the supports placed between tracks. The tracks are stub-end and have a combined clear width of 9,750 ft. They are arranged in pairs 14 ft. 8 in. center to center and are separated by concrete platforms 14 ft. 2½ in. in width, with their top surfaces 6 in. above the rail, with a 2-in. crown in the center. Keppler skylights requiring more than 50,000 sq. ft. of glass are used in the train sheds. The movement of trains in and out of the sheds will be controlled by an all-electric interlocking plant not yet constructed. The arrangement of the



Interior of the Main Waiting Room

the baggage room proper. To reach the trains with baggage, trucks are run from the baggage room through the concourse to the proper platform. The headhouse is set back 20 ft. from the street lines to allow space for a paved areaway leading to the express, mail and baggage rooms.

The waiting room and toilet facilities for immigrants occupy the Scott street end of the second floor of the headhouse. The remainder of this floor is devoted to lounging and locker rooms for the use of the employees of the railroads, the Pullman Company, the express company and mail clerks. Four toilet rooms are also provided for the use of employees.

Immediately adjoining the headhouse is the concourse 35 ft. by 181 ft. in area and open to the roof. It provides wait-

ing room facilities for passengers not desiring to enter the main station. This plan has not been generally used in station design and has a very great advantage over the usual type in the saving of space.

The freight layout is located between Scott, Washington, Mississippi and Perry streets, directly across Scott street from the headhouse and train sheds of the passenger terminal. It includes the freight house and tracks, a team yard and a track equipped with a 40-ton electric crane for handling heavy materials. This crane operates through a longitudinal distance of 148 ft. and can serve four cars at a time. The yard tracks are all stub-end. The entrance to

the yards is double tracked and will be controlled by an all-electric interlocking plant. At the corner of Scott and Perry streets a track is equipped with a concrete ramp for unloading end-opening cars.

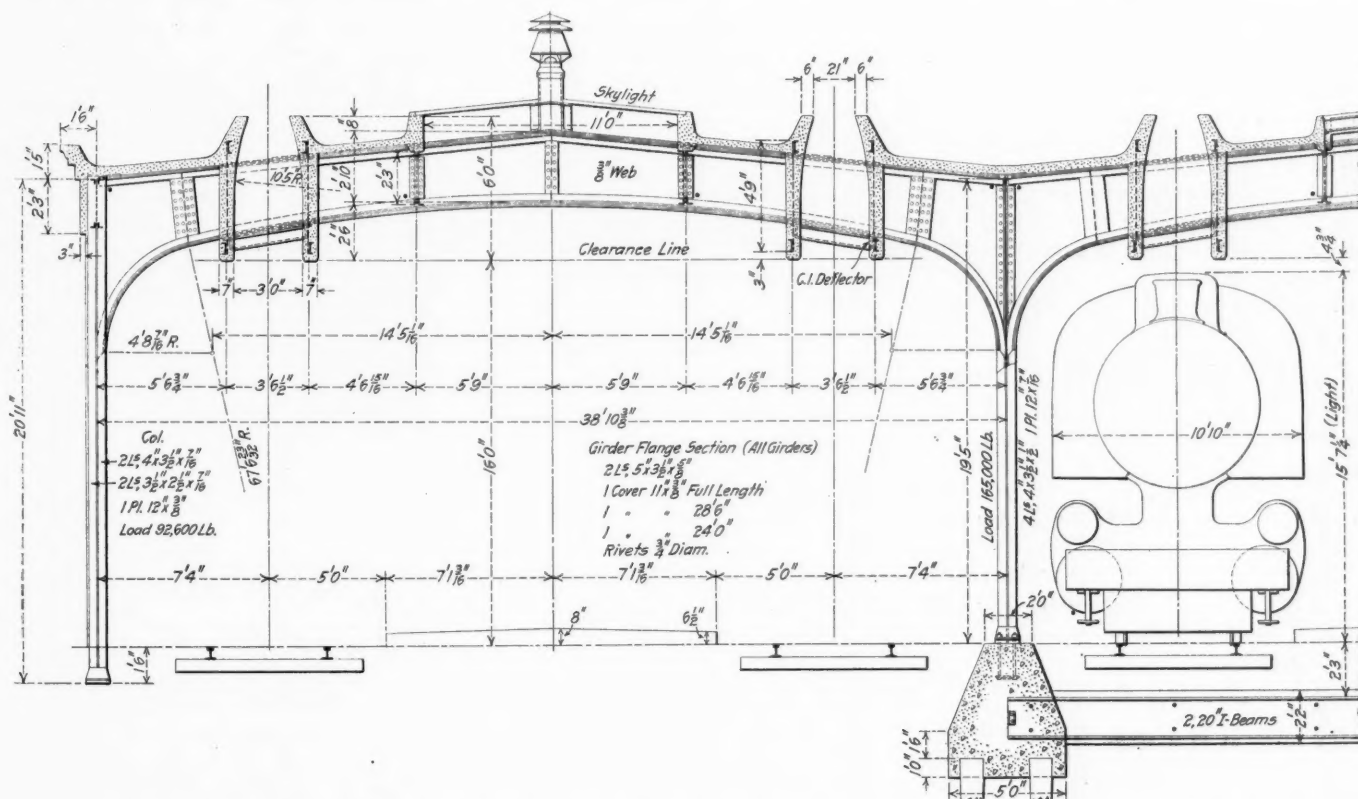
In acquiring the site for the freight layout a large area of valuable improved property was purchased by the railroad. To utilize the site it was necessary to close Burrell place and Beaver alley and in the agreement with the terminal commission the necessary consent was secured.

The freight house is set back 15 ft. from the east line of Washington street and 18 ft. from the south line of Scott street. The Washington street end is a two-story, steel-encased structure with a granite base and terra cotta trimming, with a 60-ft. frontage on Washington street and extending back 111 ft. along Scott street. The entrance is from Washington street and opens into a lobby with offices for the cashier and clerk on either side. In the rear of the lobby is a 5 ft. passage way leading to the freight room and

Light is admitted to the freight room by continuous wire glass windows over the doors. Artificial light is provided by 3-200 watt lights in each section.

The areaway between Scott street and the house is paved with Belgian blocks. On the track side a concrete platform 10 ft. in width extends the full length of the building with ramps at both ends. Canopies are provided over the driveway and the platforms. The foundation piers that support the house are carried on concrete piles cast on the ground and driven to rock by means of a jet and a steam hammer. These piles are designed for a load of 25 tons.

The house is served by three tracks having a combined clear length of 1,800 ft. Both inbound and outbound freight are handled through the house, the two east sections being used for inbound freight and the third section which adjoins the office for outbound. Two and four wheel hand trucks are used. Nine Kron scales of 3,500-lb. capacity are provided in the freight rooms. Electric light conduits are provided un-



Cross Section of the Train Shed Showing the Supports Between the Tracks and Unobstructed Platforms

separating a storage room from the perishable freight room, each of which has an area of 26 ft. by 54 ft. The perishable freight room is heated in cold weather, but has no refrigerating plant for summer use.

The second floor is occupied by the agent and clerks. The general office has an area of 58 ft. by 69 ft. with a record room in the rear with an area of 20 ft. by 58 ft. Toilet facilities are provided on both floors of the office building. The floors in the lobby and toilets are tile while maple flooring is used in the offices.

Connected directly with the office building is the freight house proper, 60 ft. in width by 577 ft. in length. This house is a steel, brick and concrete structure and is divided into three sections by firewalls, equipped with Kinnear automatic steel rolling doors on one side of the wall and Ajax sliding doors on the other. The side doors are also Kinnear steel rolling doors equipped with chain hoists and steel canopies. The roof trusses span the entire width of the building, leaving the floor area clear of obstructions. Johns-Manville mastic floor on a concrete base is used in the freight house.

der the platform slab with sockets in the track side for portable lights for use inside cars.

Refrigerator cars are iced at the house by an arrangement with a local ice company. The cars to be iced are placed on the track next to the platform and the ice wagons are driven up the ramp, the cars iced and the wagons then pass along the platform and down the ramp at the other end.

A concrete fence with iron gates encloses the entire freight layout. A concrete house is provided for the yard man and gate tender on the Washington street side.

This project has been carried out under the direction of E. B. Ashby, chief engineer. Kenneth M. Murchison of New York was architect for the station building and J. Henry Miller of Baltimore was the contractor for both the passenger station and the freight house.

AN ENGLISH RAILWAY'S CONTRIBUTION.—Of the 3,406 men who have joined the colors from the London, Brighton and South Coast, 162 have been killed, 304 wounded, and 30 made prisoners.

CONGRESS AND THE "EIGHT-HOUR" LAW

WASHINGTON, D. C., September 12, 1916.

Even amidst the rush and confusion incident to the adjournment of Congress on Friday of last week, the so-called "eight-hour" law, hurriedly passed by Congress to avert a strike of the train employees, continued to be a source of lively discussion at the Capitol until the last day of the session. The prompt seizure of the issue for campaign purposes by Charles E. Hughes, the Republican candidate for President, and the decision of the Newlands joint congressional subcommittee to include the wages and hours of labor in its investigation of railway regulation, seem to insure that the subject will continue to be an exceedingly live one during the period before the law becomes effective on January 1.

The fact that the law might prove to be one of the principal issues in the campaign was apparently manifest to many members of Congress as soon as the bill reached them, and many of them began preparing for such a contingency at once by scrambling to get into the Congressional Record their views on the subject for future use. During the limited time available for the passage of the measure before the strike order should become effective there were not enough hours in the day for all members of Congress to make oral speeches, but a large proportion of those who did not have something to say at the time have taken advantage of the opportunity accorded them since then under a general "leave to print" privilege, to "extend" their remarks on the pages of the Record to such an extent that while Congress adjourned on September 8 it is proposed to continue the publication of the Record till September 20 to include the written speeches. Scores of newspaper editorials and other articles on the subject have been incorporated in the Record for the same purpose, and the proceedings at the hearing before the Senate Committee on Interstate Commerce on August 31 are to be printed as a Senate document and will undoubtedly be made useful for campaign purposes.

Mr. Hughes began his attack on what he called Congress' surrender to organized labor, in his speech at St. Louis on Labor Day, and continued it in his speeches during the week, referring to it as "legislation under oppression," "a surrender of the principle of arbitration," and "but another step from the abdication of government itself." "We have recently had, at the proposal of the executive," he said, "an act passed by Congress, confessedly in ignorance of the facts, confessedly in ignorance of what justice demands. It is not an eight-hour-a-day law. It is a wage law and nobody knows whether it was just or not." Several of the Democratic members of Congress immediately felt called upon to defend the course of the administration and of themselves by insisting that they had performed a great service to the country by averting a strike, and that whatever defects there may be in the law as passed were due to the necessity of acting quickly and may be corrected at the next session. Their view of the necessity in the case must be construed in the light of what congressmen about to seek re-election had in mind as to the attitude of organized labor if they should attempt to pass a law designed solely to prevent the strike by the simple expedient of making a strike illegal.

The opinions expressed in Washington as to the probable effect of the administration's participation in the wage controversy, and especially of its partisanship toward the side of the trainmen, seem to depend mainly on the political faith of the speaker. Democrats insist that the fact that a strike was averted may be used as valuable political capital, as a sort of companion to the fact that Wilson "kept us out of war," and are evidently placing a great deal of dependence on the efficacy of the "eight-hour day" slogan. Republicans, on the other hand, feel that they have the same chance to criticize the methods by which the strike was averted, as the methods by which open hostilities with Mexico have been avoided, and avowed advocates of a real eight-hour day keep ham-

mering away at the fact that the new law does not provide an eight-hour day.

One indication of what effect the "eight-hour" law issue may have on the political prospects of the administration was promptly furnished in the results of the Maine election on Monday, in which the Republicans won a sweeping victory. Whether or not the reputation of the state as an election weathervane is to be sustained, the fact that national issues played such a prominent part in the campaign and that the labor question was made a paramount issue when Mr. Hughes made so many of his speeches attacking the Adamson law during his tour of the state will, undoubtedly, give an unusual significance to the result. Maine is a state in which the population is not of a kind to appreciate giving a special preference either in wages or hours to a single class of labor, but would be inclined to consider the effect of a large increase in railroad expenses on the freight and passenger rates paid by the public. It is admitted that the value of the new law as a political asset will depend on the comparative effect of whatever it may be worth to organized labor as giving prestige to the eight-hour movement and its reception by the employers of labor and the shippers of freight.

Senator Martine of New Jersey has already discovered what is to his mind "a complete connection between the railroads—particularly the Pennsylvania Railroad—and the Republican party," in an extract from a statement on the subject of railroad regulation, by Charles E. Hughes, printed on the menu cards used in the Pennsylvania dining cars. In an impassioned speech in the Senate on September 8 he characterized this as a "most infamous abuse," "a miserable farce and contemptible humbug," a "burning wrong and outrage" and "clearly a case of a contribution to the Republican campaign fund." He wanted to "make such a system of insidious advertising a crime against the laws of the land," and was not perceptibly appeased when Senator Penrose remarked that, according to his information, President Rea of the Pennsylvania is a Democrat and voted for Wilson. The Senator made no prediction as to how Mr. Rea would vote this year.

Representative Adamson, chairman of the House Committee on Interstate Commerce, and the father of the bill in the House, has published a speech in the Record defending it as providing for a real eight-hour day. He says the law fixes an eight-hour day just as the hours of service law provides for a 16-hour day and a 9-hour day and that "the only reference to wages is in the language used to hold *in statu quo* until the workings of the eight-hour law could be observed and all other features of the service adjusted to the eight-hour law"; that "when we have time to agree we will enact whatever else is necessary," and "equitably adjust all the relations between the roads and the men." "We will establish conditions under which wages will be adjusted according to what is right and proper." He added, "On the other hand the railroads will be taken care of. If the men are being paid too much or too little their wages will have to be increased or diminished. If when these proposed adjustments are made, either by legislation or by agreement of the parties, it is found that the railroad rates are too low to be remunerative they will be increased under existing law. If they are too high they will be reduced in the same way."

President Wilson has also given an explanation of his attitude, indicating that the question has by no means been settled, in a statement regarding the work of Congress. He said:

"It is to be regretted that the session could not have continued long enough to complete the program recently projected with regard to the accommodation of labor disputes between the railways and the employees, but it was not feasible in the circumstances to continue the session any longer, and therefore only the most immediately pressing parts of the program could be completed."

"The rest, it is agreed, has merely been postponed until it can be more maturely deliberated and perfected. I have every reason to believe that it is the purpose of the leaders of the two houses, immediately upon the reassembling of Congress, to undertake this additional legislation. It is evident that the country should be relieved of the anxiety which must have been created by recent events with regard to the future accommodation of such disputes."

The rest of the President's program, it will be recalled, included a provision for a compulsory investigation before a strike could be called, as well as provision for an increase in rates if the additional expense of a wage increase should render it necessary. In view of this fact, and the many statements being made by members of Congress that the law as passed was merely a make-shift—intended to bridge the chasm created by the imminence of election day—which may be entirely reconsidered at the next session, there is some occasion for wonder why the brotherhood leaders were so willing to accept it, unless they were anxious to be relieved of the necessity of carrying out their strike threat. It will be remembered that Warren S. Stone, of the Brotherhood of Locomotive Engineers, recently said that carrying around a strike order in his pocket was something like carrying dynamite. Possibly he and the other brotherhood leaders were entirely willing to exchange the dynamite even for a "gold brick."

Senator Simmons, chairman of the Senate Committee on Finance has also issued a statement in defense of the course pursued. "We did what was necessary to be done," he said. "The strike was averted. The country was saved from the frightful consequences which everyone foresaw would inevitably follow should there have been a failure in this behalf. Of course, no one responsible for that legislation thought or intended that it should be the end of legislation upon this subject. It was only the beginning. It was all that was absolutely necessary at the time to accomplish the purpose in view. I am confident that at the next session this subject will be taken up and we will have comprehensive legislation which will make a recurrence of the menace which we have just escaped impossible; which will deal with this subject in all of its phases, and which will establish a permanent and just rule for all the factors of our interstate commerce."

As the hearings before the Newlands committee are to begin on November 20 it is likely that the railroads will have an opportunity to present convincing evidence of the need for a comprehensive program of legislation for the regulation of wage disputes at that time. Meanwhile the counsel for the railroads will make a careful study of the course of action that they should adopt with reference to the new law. In reply to the statement by President Ripley of the Atchison, Topeka & Santa Fe, that that road would not comply with the law until forced to by the courts, Chairman Newlands of the Senate Committee on Interstate Commerce said that the government would proceed to enforce the law on petition of any employee.

Senator Lewis of Illinois, a member of the Senate Committee on Interstate Commerce, had expected to introduce in the Senate at the closing session a bill providing for the creation of a new executive department of transportation, to which would be referred such controversies between railroads and their employees. On account of the pressure of other matters at the closing session the bill will now be deferred until Congress resumes its sessions in December. The bill will provide for a new member of the cabinet, with the title of Secretary of Transportation, to have supervision over matters affecting railroads, water lines and interstate electric lines, with the exception of rate questions, which would be left to the Interstate Commerce Commission. The idea is to give the new department jurisdiction over railroad operations, including those relating to equipment, and questions between the companies and the employees, and also the administration

of the Panama Canal, superseding the Isthmian Canal Commission, and of the government railway in Alaska, now in the hands of the Department of the Interior. It is proposed that the secretary of transportation shall be an experienced transportation man and that he shall have two assistants, also experienced, one in operation and the other in traffic.

THE FEDERAL BILL OF LADING LAW

The bill of lading act, passed by the present Congress—the Pomerene bill, which has been under discussion, off and on, for more than four years*—became a law August 29. It consists of 45 sections and goes into effect January 1, 1917.

It embodies a carefully prepared codification of all existing federal law on this subject and puts in statute form numerous common-law principles; it makes a new rule concerning the carriers' duty to count or weigh goods loaded by shippers; and, reversing the rule at present and heretofore enforced by the federal courts, makes the carrier fully responsible for the acts of agents in signing bills of lading. These last-named provisions are embraced in sections 20, 21, 22, which are as follows:

"SEC. 20. That when goods are loaded by a carrier such carrier shall count the packages of goods, if package freight, and ascertain the kind and quantity if bulk freight, and such carrier shall not, in such cases, insert in the bill of lading or in any notice, receipt, contract, rule, regulation, or tariff, 'Shipper's weight, load, and count,' or other words of like purport, indicating that the goods were loaded by the shipper and the description of them made by him or in case of bulk freight and freight not concealed by packages the description made by him. If so inserted, contrary to the provisions of this section, said words shall be treated as null and void and as if not inserted therein.

"SEC. 21. That when package freight or bulk freight is loaded by a shipper and the goods are described in a bill of lading merely by a statement of marks or labels upon them or upon packages containing them, or by a statement that the goods are said to be goods of a certain kind or quantity, or in a certain condition, or it is stated in the bill of lading that packages are said to contain goods of a certain kind or quantity or in a certain condition, or that the contents or condition of the contents of packages are unknown, or words of like purport are contained in the bill of lading, such statements, if true, shall not make liable the carrier issuing the bill of lading, although the goods are not of the kind or quantity or in the condition which the marks or labels upon them indicate, or of the kind or quantity or in the condition they were said to be by the consignor. The carrier may also by inserting in the bill of lading the words 'Shipper's weight, load, and count,' or other words of like purport indicate that the goods were loaded by the shipper and the description of them made by him; and if such statement be true, the carrier shall not be liable for damages caused by the improper loading or by the non-receipt or by the misdescription of the goods described in the bill of lading: *Provided, however,* Where the shipper of bulk freight installs and maintains adequate facilities for weighing such freight, and the same are available to the carrier, then the carrier, upon written request of such shipper and when given a reasonable opportunity so to do, shall ascertain the kind and quantity of bulk freight within a reasonable time after such written request, and the carriers shall not in such cases insert in the bill of lading the words 'Shipper's weight,' or other words of like purport, and if so inserted contrary to the provisions of this section, said words shall be treated as null and void and as if not inserted therein.

"SEC. 22. That if a bill of lading has been issued by a

*See *Railway Age Gazette*, March 17, 1916, page 481; April 14, page 845; May 5, page 988.

carrier or on his behalf by an agent or employee the scope of whose actual or apparent authority includes the receiving of goods and issuing bills of lading therefor for transportation in commerce among the several states and with foreign nations, the carrier shall be liable to (a) the owner of goods covered by a straight bill subject to existing right of stoppage in transitu or (b) the holder of an order bill, who has given value in good faith, relying upon the description therein of the goods, for damages caused by the non-receipt by the carrier of all or part of the goods or their failure to correspond with the description thereof in the bill at the time of its issue."

SEC. 41 provides a penalty of a fine of not exceeding \$5,000 or imprisonment for five years or both, for forgery or counterfeiting any bill of lading or for any one who issues, negotiates or transfers for value a bill which contains a false statement as to the receipt of goods.

THE ELSMITH PASS HOLDER AND WRITING FRAME

Ernest L. Smith, chief clerk to the general manager of the Oregon Short Line, Salt Lake City, Utah, has devised a frame, made of heavy paper, to be used in filling out annual passes on the typewriter, which enables him to make the pass and all necessary records at one writing, two, three, or four carbon sheets being used, as may be necessary; and the patent office has allowed his claim for a patent on the invention.

The frame, made of heavy linen paper, is illustrated in outline in the accompanying engraving, its size being reduced one-half in width and height. The pass card is fastened in place by the insertion of its two upper corners in slits cut in the holder. The corners beneath the holder

The diagram illustrates the Elsmith Annual Pass Holder and Writing Frame. It is a rectangular frame made of heavy paper. Inside the frame, a pass card is held in place by its two upper corners being inserted into slits cut in the holder. The pass card is titled "Oregon Short Line - No. A" and "1916 - Railroad Company". It contains several fields for information: "Name", "Account", "Territory", "Date of Expiration", "Address", "Request of", and "Remarks". There is also a "Date Issued" field on the right side of the frame. The pass card itself has a section for "PASS" and "Account" with a note: "(TRANSFER AND TIME LIMITATION WHEN NECESSARY TO BE WRITTEN IN THIS SPACE)". Below this, it says "GOOD OVER ALL DIVISIONS UNTIL DECEMBER 31, 1916, UNLESS OTHERWISE ORDERED OR SPECIALLY DESIGNATED, AND SUBJECT TO CONDITIONS OF RATE." and "VALID WHEN COUNTERSIGNED BY _____ OR _____". At the bottom of the frame, it says "THE 'ELSMITH' ANNUAL PASS HOLDER & WRITING FRAME (PATENT APPLIED FOR)".

Elsmith Annual Pass Holder and Writing Frame

are shown by dotted lines, and in the same way the engraving shows the part of the holder that is beneath the pass card. The blanks beneath are made to register in a simple manner by matching their edges with the edges of the holder.

The words printed at the left of the holder "Name; Account; Territory; Date of expiration;" etc., correspond with the same or similar words on the blanks beneath, the blanks being so printed as to call for the desired information in exactly the same position on each blank.

On the Oregon Short Line the records include a form which is substantially a duplicate of the pass; an "advice" to be sent with passes which have been issued without request, an acknowledgment of receipt of the pass, and classification form.

When a pass has been written, it can be taken out of the frame and then additional information, if such is desired, can be written on the top sheet remaining in the typewriter.

A competent clerk can write 400 passes and records in a day. Experience with the device has proved its practicability, efficiency and economy.

TO INVESTIGATE TRANSPORTATION FACILITIES FOR MILITARY PURPOSES

The army appropriation bill, recently passed by Congress and approved by the President, contains special provision for a study of the transportation question in its relation to military purposes. The act provides for the creation of a Council of National Defense "for the co-ordination of industries and resources for the national security and welfare," to consist of the secretaries of war, navy, interior, agriculture, commerce and labor, who are to nominate for appointment by the President, an advisory commission of not more than seven persons, "each of whom shall have special knowledge of some industry, public utility, or the development of some natural resource, or be otherwise specially qualified, in the opinion of the council, for the performance of the duties hereinafter provided." They are to serve without compensation, but shall be allowed expenses.

According to the terms of the act it shall be the duty of the Council of National Defense "to supervise and direct investigations and make recommendations to the President and the heads of executive departments as to the location of railroads with reference to the frontier of the United States so as to render possible expeditious concentration of troops and supplies to points of defense; the co-ordination of military, industrial and commercial purposes in the location of extensive highways and branch lines of railroad; the utilization of waterways; the mobilization of military and naval resources for defense; the increase of domestic production of articles and materials essential to the support of armies and of the people during the interruption of foreign commerce; the development of seagoing transportation; data as to amounts, location, method and means of production, and availability of military supplies; the giving of information to producers and manufacturers as to the class of supplies needed by the military and other services of the government; the requirements relating thereto, and the creation of relations which will render possible in time of need the immediate concentration and utilization of the resources of the nation."

The Council of National Defense "shall adopt rules and regulations for the conduct of its work, which rules and regulations shall be subject to the approval of the President, and shall provide for the work of the advisory commission to the end that the special knowledge of such commission may be developed by suitable investigation, research and inquiry and made available in conference and report for the use of the council; and the council may organize subordinate bodies for its assistance in special investigations, either by the employment of experts or by the creation of committees of specially qualified persons to serve without compensation, but to direct the investigations of experts so employed."

The sum of \$200,000, or so much thereof as may be necessary, is appropriated to be immediately available for experimental work and investigations undertaken by the council, by the advisory commission, or subordinate bodies, for the employment of a director, expert and clerical expenses and supplies, and for the necessary expenses of members of the advisory commission or subordinate bodies.

TIMBER PRESERVATION.—To preserve timber from decay it is treated with an antiseptic, such as creosote or zinc chloride. Creosote is the oldest known preservative and one of the best. Creosote oil is insoluble in water, and has a boiling point of over 4,100 deg. F.—*Power.*

Caboose for Nashville, Chattanooga & St. Louis

Built with Steel Frame Construction for Use on Trains
Where Mallet Locomotives Are Employed as Pushers

THE Nashville, Chattanooga & St. Louis on its Chattanooga division passes over the Cumberland mountains. Pusher service is required to get the tonnage trains over this grade. With the installation of the Mikado locomotives on this division the tonnage of the trains has been materially increased and Mallet locomotives having 99,000 lb. tractive effort have been installed to push these trains over the mountain. This has made necessary the construction of 30 cabooses of sufficient strength to be used ahead of the Mallets. They were designed and built at the company's shop at Nashville, and have substantial steel underframes and steel frame superstructures and are of the single sheathed type. They are of the following general dimensions:

Length over striking castings.....	37 ft. 8½ in.
Length inside.....	31 ft. 6½ in.
Length between end sills.....	36 ft. 11½ in.

center sills are connected at each crossbearer by a 12-in. channel spacer connected to each center sill by one 4-in. by 4-in. by ¾-in. angle. The two crossbearers are made up of ¾-in. web plates bound at the top and bottom on each side by 3-in. by 2½-in. by ¼-in. angles. They are connected to the center sill by two 4-in. by 4-in. by ¾-in. angles and to the side sill by two 6-in. by 4-in. angles. The side sills are 8-in., 11.25-lb., channels extending the full length of the car between the end sills, being connected to them by the 5-in. by 3½-in. by 5/16-in. corner post angles. The end sills are made of the same material and extend the full width of the car. They are connected to the center sill by 5/16-in. gusset plates and the striking castings. The body bolsters consist of steel castings which extend between the center and side sills. They are the same as those used on the road's 80,000 lb.



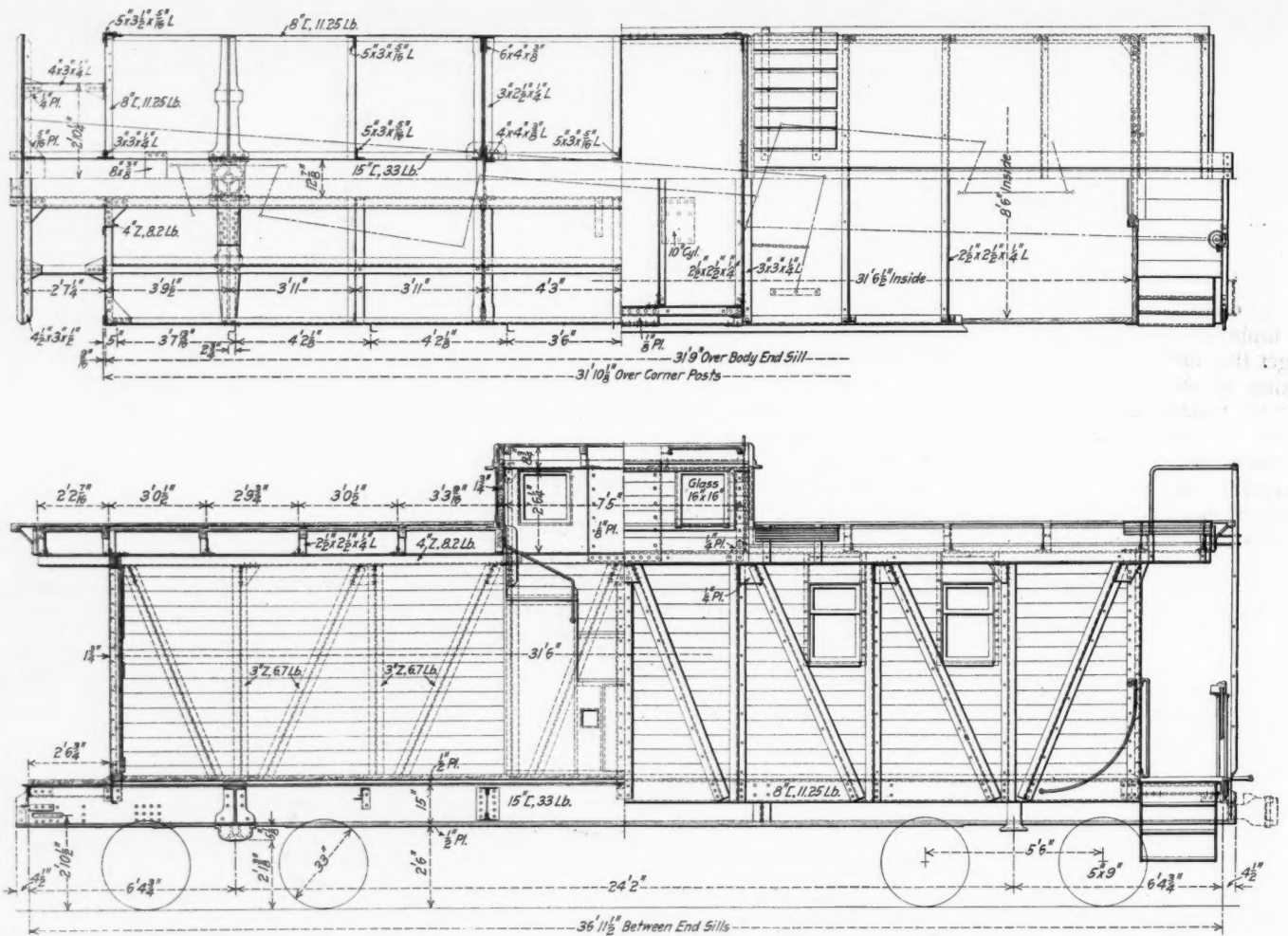
Steel Frame Single Sheathed Caboose for the N. C. & St. L.

Width inside.....	8 ft. 6 in.
Height from floor to top of rail.....	4 ft. 6¾ in.
Height from rail to top of running board.....	11 ft. 8¼ in.
Center to center of trucks.....	24 ft. 2 in.
Truck wheel base.....	5 ft. 6 in.
Width of platform.....	2 ft. 6 in.

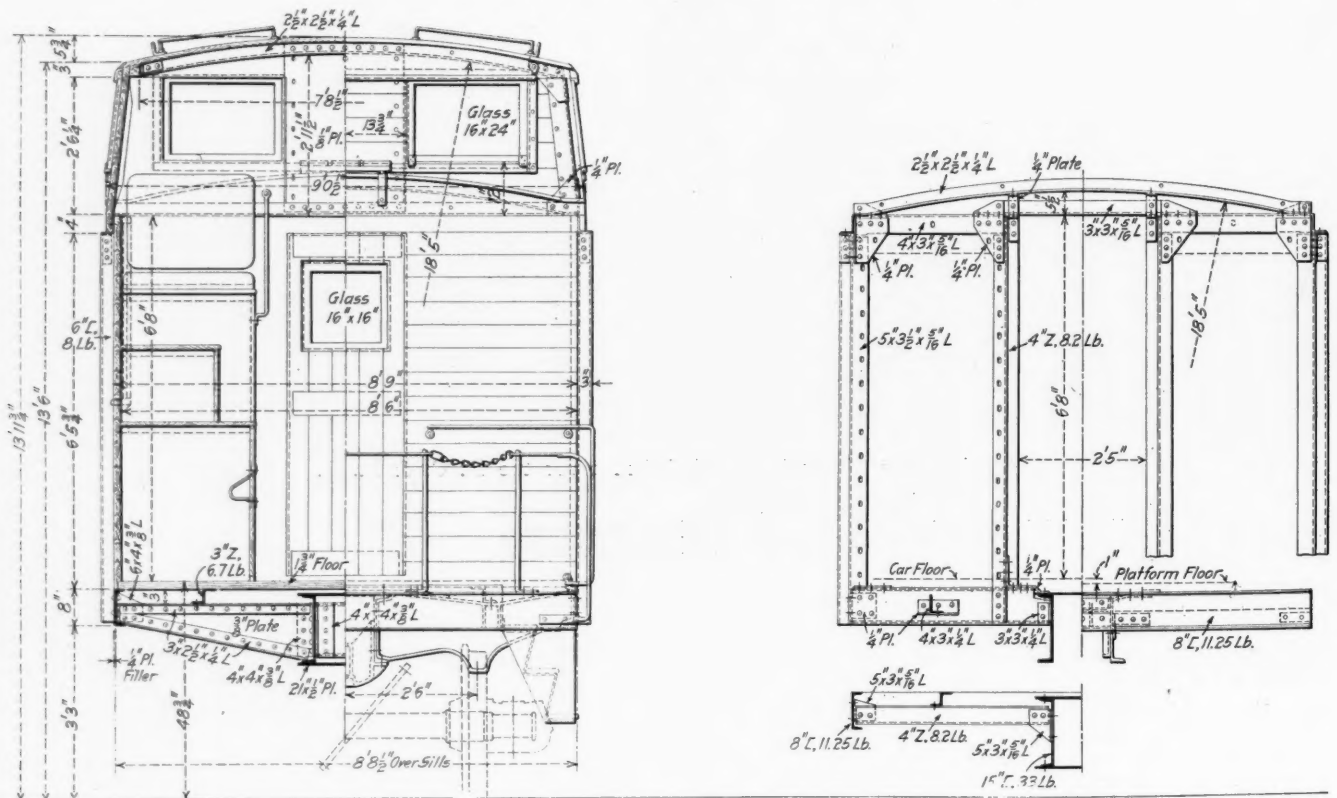
The underframe is made of structural shapes, the center sill consisting of two 15-in., 33-lb., steel channels extending the full length of the car and under the striking castings. They are spaced 12¾ in. from back to back, the flanges being turned outward, and are covered for their full length by a top cover plate 21 in. wide by ½ in. thick, which extends over the body bolsters. The bottom cover plate is of the same material and extends between the bolsters. The

capacity box cars. A cover strap riveted to the top of the bolster passes over the center sill securely tying together the body bolsters on each side of the center sill. The connection between the center sills at the body bolster is made by a cast steel truck center casting. There are three floor beams per car which consist of 4-in., 8.2-lb., Z-bars fastened to the center and side sills by an angle bar. The floor stringers consist of two 3-in., 6.7-lb., Z-bars extending between the end posts and fastened to the end sill.

The framing of the car is similar to that used in the 80,000 lb. capacity box cars. The side posts and braces consist of 3-in., 6.7-lb., Z-bars which are riveted to the side



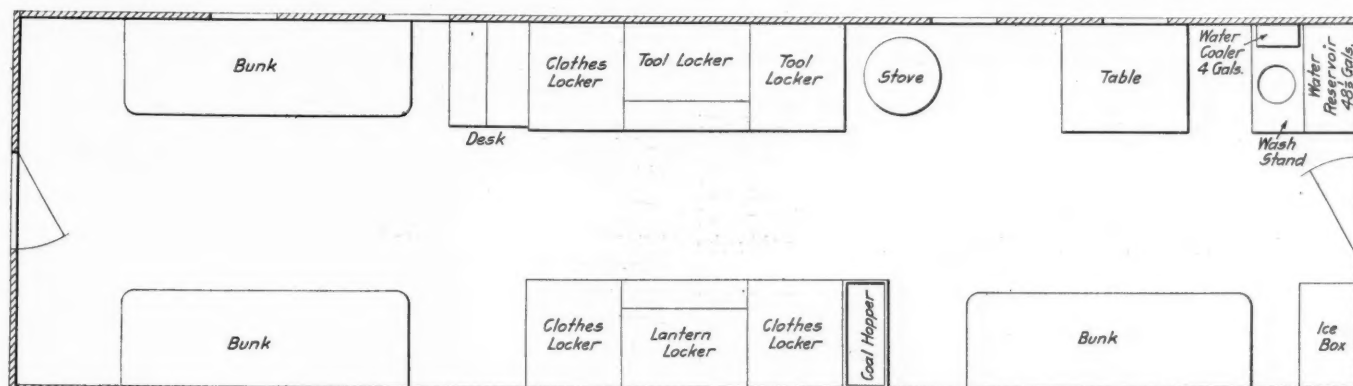
Plan and Elevation of N. C. & St. L. Caboose Cars



End Elevation and Sections of Steel Frame Caboose Cars

sills and are connected to the side plates by $\frac{1}{4}$ -in. steel gusset plates. The end posts consist of 4-in., 8.2-lb., Z-bars which are riveted to the end sills and are connected to the end plates by angle bars as shown in the drawing. The corner posts are 5-in. by $3\frac{1}{2}$ -in. by $\frac{5}{16}$ -in. steel angles. The side plates consist of 4-in., 8.2-lb., Z-bars and the end

all journals regardless of the track conditions. It will be noticed that near the ends lugs are formed $1\frac{3}{8}$ in. deep, 2 in. wide and with a radius of 8 in. These rest in corresponding grooves in the lower member of the truck frame. With this construction the truck is less liable to derail under rough track conditions than the rigid truck where the weight

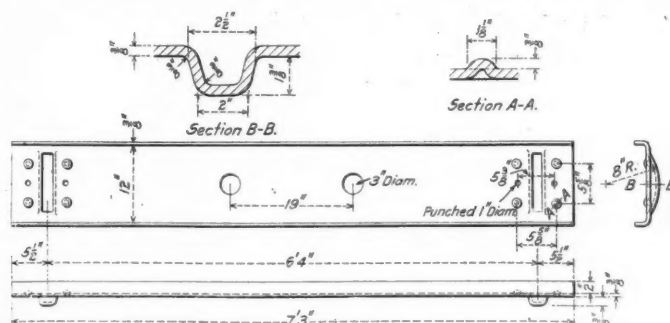


Floor Plan of N. C. & St. L. Caboose Cars

plates are 4-in. by 3-in. by $\frac{5}{16}$ -in. angles. Both the side plates and end plates are riveted directly to the corner post angles. The carlines are made of $2\frac{1}{2}$ -in. by $2\frac{1}{2}$ -in. by $\frac{1}{4}$ -in. angles filled with $2\frac{1}{2}$ -in. by $2\frac{1}{2}$ -in. filler blocks to which is nailed the roofing. The lining is $1\frac{1}{2}$ -in. tongued and grooved yellow pine having a $5\frac{1}{2}$ -in. face on all except the top board, which is $8\frac{3}{4}$ in. The roof lining is $\frac{13}{16}$ -in. yellow pine. It is covered with Follansbee slow process tin. The flooring is ship-lapped yellow pine $1\frac{3}{4}$ in. thick with a $7\frac{1}{4}$ -in. face. The flooring is secured to the steel stringers by $\frac{1}{2}$ -in. carriage bolts. The cupola framing is built up of steel plates and angles. The operating arrangement for the conductor's valve is such that it may be operated

shifts diagonally on the journals. The truck springs are of the triple elliptic type.

The cars are equipped with the Miner friction draft gear, Westinghouse schedule K.C. 1012 air brakes, Sharon cast



Sullivan Spring Plank for Car Trucks

steel couplers with 5-in. by 7-in. shank, and the National Malleable Castings Company's journal boxes. The Master Car Builders' standards have been used extensively throughout the entire car.

RUSSIAN STEEL IMPORTS IN 1915.—Russian imports of certain steel products over the European, Russo-Finnish and Black Sea frontiers are given as follows in metric tons:

	1913	1914	1915
Wrought iron and steel.....	38,690	28,830	27,080
Tin plates and sheets.....	7,370	4,910	920
Wire and manufactures.....	8,710	7,490	48,660
Total	54,770	41,230	76,660

The large increase for 1915 over 1914 is due mostly to imports of barb wire.—*Iron Age*.

THE HIGH POLISH OF RUSSIAN SHELLS.—One reason suggested for the high polish of Russian shells was, that when the shells were silver or nickel plated, the plating acted as a resister against rust. And one of our rather sarcastic friends thought that so finished the shells looked better as souvenirs on the top of a grand piano in a drawing room. The subject may now be settled and further discussion cease. We have it from a high Russian authority that this fine finish and polish are to prevent pulling off some lint from the cotton gloves worn by the soldiers who load the guns. A rough surface on the shells would pull off some of this lint, which would fill up the clearance between the shell and the gun bore and impair the accuracy of the firing piece.—*American Machinist*.



Interior of the N. C. & St. L. Steel Frame Caboose Cars

from the outside on both ends of the cupola and from either of the interior cupola seats. This arrangement has recently been made standard on this road.

The trucks have a wheel base of 5 ft. 6 in., 5-in. by 9-in. journals and 33-in. wheels. The truck side frame is of the Scullin type with the Sullivan flexible spring plank. This spring plank, which is shown in one of the drawings, is the invention of J. J. Sullivan, superintendent of machinery of the N. C. & St. L., and was designed for the purpose of making an equalized truck, distributing the weight equally on

COLLAPSE OF THE QUEBEC BRIDGE

Another unfortunate chapter was added to the history of the Quebec bridge now being built over the St. Lawrence river, when on the afternoon of September 11 the suspended span, which is 640 ft. long and 80 ft. wide, weighing approximately 5,000 tons, collapsed while it was being raised from scows to its final level, 150 ft. above the water. Of the 90 men working on the structure 11 are reported killed or drowned and many others injured.

This span was erected about three miles down stream from the site of the bridge, on staging placed under each panel point. When the erection was completed the intermediate supports were removed and the bridge swung on the end bents. Six scows were floated in and sunk under panel points, L 1, L 2, L 3, L 15, L 16 and L 17. At low tide the



The Completed Suspended Span As Erected Three Miles Below the Site of the Bridge. The Staging Is Still in Place

scows were drained, and as the tide rose the span was lifted from the end supports and the load transferred to the scows. Tugs then towed the span to its proper position, and on arrival at the bridge site the span was anchored to the end of hanging trusses and coupled up to the hanger slabs provided at the four corners of the cantilever arms and made ready to be raised to its final position by hydraulic jacks. A full account of the erection methods appeared in the *Railway Age Gazette* of May 26, 1916.

The span had been raised about 15 ft. when the collapse occurred, and, up to the time that this article was written, no official statement had been made as to the probable cause of the accident. P. S. Johnson, president of the St. Lawrenceof

Company, Aldene, N. J., who installed the hydraulic jacks and who was engineer in charge of installation on the bridge, said: "The jacks are still in their positions and are practically intact. There was no weight on them when the span moved off, they being just getting ready to take hold again to lift the span to the fourth notch. It is hard to say just what caused the accident. I may say, however, that nothing has been spared by the company to guard against possible mishap, yet this regrettable affair occurred."

HISTORY OF THE BRIDGE

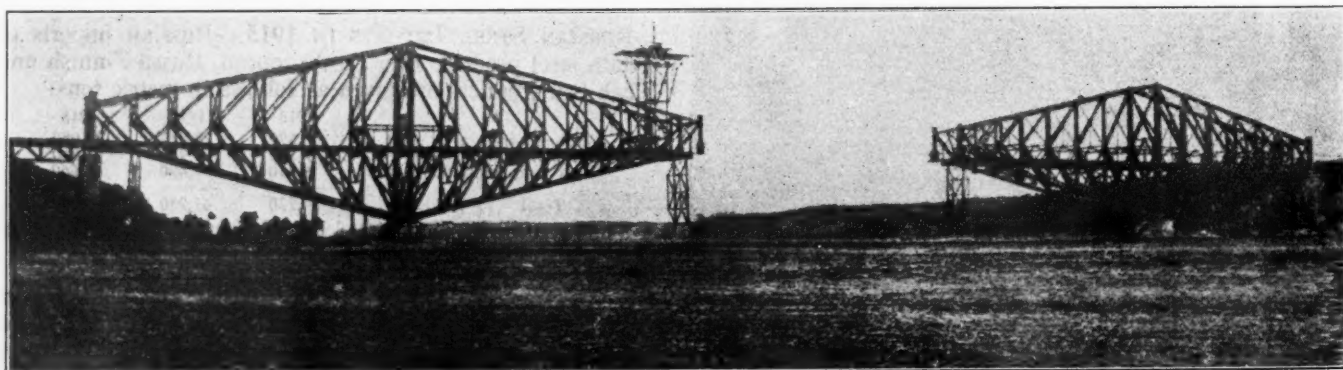
The project thus interrupted was first given serious consideration in 1887 when the Quebec Bridge Company was chartered to build a highway and railroad bridge over the St. Lawrence about seven miles above Quebec. The company was granted subsidies by the Dominion government, the Province of Quebec and the City of Quebec. Competitive plans were asked for in 1897 and plans for a cantilever bridge were approved by the committee. During 1902-03 the truss approach spans at each end of the bridge were erected. In 1905 construction was started on the main structure, only to terminate in the disaster of 1907, an account of which appeared in the *Railway Age Gazette* of September 6, 1907.

After 1907 the Dominion government took up the construction of the bridge and a board of engineers was appointed. It is comprised of C. M. Monsarrat, chairman and chief engineer; Ralph Modjeski and C. S. Schneider. The construction of the new bridge has been carried on under the direction of this board.

COMPARATIVE SUMMARY OF FREIGHT CARS IN SERVICE

The tables on the two pages immediately following show the number of freight cars in service on all of the important railroads of the country in 1914 and 1915 and in 1900 and 1915. It will be noted that narrow-gage cars are excluded, as well as non-revenue cars, but that cars used to carry company freight are included. The railways are grouped under the heads of New England roads, trunk line roads, Southern classification roads, Central classification roads and Western classification roads.

The tables show the number of cars in service, the number cars per mile of road, average length of haul, freight cars



The Completed Anchor and Cantilever Spans Showing the Hanging Trusses to Which the Suspended Span Was Anchored When the Collapse Occurred

& Dominion Bridge Company, is quoted as saying: "We are at a total loss to account for it thus far. The lifting apparatus is still in place and is practically uninjured. It is hard to say whether the bridge slipped off its end bearings or whether the trusses of the span failed. I do not think I can express myself further than this."

W. D. Updergraff, representative of the Watson-Stillman

per thousand freight car miles and per thousand ton miles, the average rate per ton per mile, and the freight cars in service per thousand dollars of freight earnings.

The table does not show the capacity of cars and, of course, railroads which show a decrease in the number of cars may have cars with a larger total capacity despite the smaller number.

COMPARATIVE SUMMARY OF FREIGHT CARS IN SERVICE ON RAILROADS OF THE UNITED STATES—1914 AND 1915

Note.—Narrow-gauge cars excluded.
Non-revenue cars excluded.
Company freight included.

Note.—Narrow-gage cars excluded. Non-revenue cars excluded. Company freight included.	Miles		Freight equipment		In-crease	De-crease	Per cent change of freight cars per mile of road	Average length of haul		Per 1,000 rev. ton miles		Rate per ton mile (Dollars)		Frt. cars per \$1,000 frt. earnings					
	1914		1915					1914		1915		1914		1915		1914		1915	
	1914	1915	1914	1915				1914	1915	1914	1915	1914	1915	1914	1915	1914	1915		
NEW ENGLAND RAILROADS—																			
Boston & Maine R. R. Co.	2,302	2,302	23,964	23,410	.....	554	2.31	10.4	10.2	106.46	106.55	107	111	0.1057	0.1119	0.86	0.86	
Bangor & Aroostook R. R. Co.	525	625	5,193	5,299	106	.....	2.04	8.3	8.5	126.93	124.52	246	245	0.1225	0.1232	1.76	1.80	
Central Vermont R. R. Co.	1,209	1,200	9,640	9,363	.....	64	2.69	5.7	5.6	79.09	80.14	103	110	0.0920	0.0960	1.01	1.06	
Maine Central R. R. Co.	2,003	2,003	35,713	34,308	.....	277	2.87	7.9	7.6	96.40	93.96	158	166	0.1050	0.1097	1.29	1.21	
N. Y. N. H. & H. R. R. Co.	6,688	6,688	77,575	75,381	.....	2,194	2.83	11.6	11.3	87.40	91.65	173	169	0.1415	0.1434	1.09	1.10	
Total	4,478	4,535	86,974	85,040	.....	1,934	2.22	19.4	18.7	99.25	99.36	157	145	0.1133	0.1168	1.20	1.10	
TRUNK LINE RAILROADS—																			
Baltimore & Ohio R. R. Co.	586	586	17,438	17,402	.....	36	0.21	29.8	29.6	161.00	153.80	189	214	0.0544	0.0546	1.15	1.20	
Buffalo, Rochester & Pittsburgh R. R. Co.	678	681	23,790	23,721	.....	69	3.99	35.1	34.8	72.80	71.51	169	174	0.1007	0.1009	1.90	2.17	
Central R. R. Co. of New Jersey	2,349	2,369	43,555	45,291	1,736	.....	90	28.9	28.6	255.00	271.00	117	106	0.0515	0.0515	1.14	1.14	
Chesapeake & Ohio Ry. Co.	904	909	18,850	18,760	.....	.....	0.48	20.9	20.6	137.48	135.31	111	111	0.0661	0.0661	1.51	1.45
Delaware & Hudson Company	985	981	28,249	27,593	.....	656	2.82	28.6	28.1	176.76	189.61	108	094	0.0665	0.0684	1.00	0.95	
Delaware, Lackawanna & West'n R. R. Co.	985	981	28,249	27,593	.....	656	2.82	28.6	28.1	176.76	189.61	108	094	0.0665	0.0684	1.00	0.95	
Erie Railroad Co.	2,257	2,257	52,811	51,791	.....	1,020	1.93	33.7	32.9	202.45	214.25	105	089	0.0743	0.0764	0.99	0.85	
Lehigh Valley R. R. Co.	1,442	1,442	45,583	44,974	.....	609	1.34	31.7	31.7	163.44	165.64	140	135	0.0657	0.0650	1.20	1.02	
New York Central Railroad Co.	5,609	5,609	134,814	129,603	.....	5,211	3.87	24.0	23.1	182.63	196.40	113	095	0.0884	0.0872	1.36	1.28	
New York, Ontario & Western Ry. Co.	568	568	6,351	6,041	.....	310	4.88	11.2	10.6	145.30	145.73	108	116	0.0727	0.0727	0.92	0.90	
Pennsylvania Railroad Company	4,512	4,541	146,429	150,293	3,864	.....	2.64	32.4	33.1	163.38	159.98	118	114	0.0662	0.0658	1.13	1.08	
Philadelphia & Reading Ry. Co.	1,120	1,120	40,730	39,014	.....	1,716	4.21	36.4	34.8	95.12	100.65	130	128	0.0705	0.0787	1.07	1.03	
Western Maryland R. R. Co.	661	659	9,116	8,816	.....	2	3.29	13.9	13.4	113.07	114.55	135	120	0.0703	0.0754	1.32	1.20	
Total	26,147	26,257	654,690	648,339	.....	6,351	0.82	25.0	24.7	158.68	163.07	127	111	0.0634	0.0642	1.25	1.15	
SOUTHERN CLASSIFICATION—																			
Atlantic Coast Line Ry. Co.	4,661	4,698	29,539	28,619	.....	920	3.11	6.3	6.1	155.59	166.73	125	132	0.1217	0.1203	1.19	1.35	
Central of Georgia R. R. Co.	1,924	1,924	10,104	9,907	.....	197	1.95	5.2	5.3	150.40	154.99	128	142	0.1083	0.1034	1.10	1.26	
Florida East Coast Ry. Co.	745	745	1,819	1,682	.....	137	7.53	2.6	2.3	164.16	184.69	068	066	0.1735	0.1672	0.70	0.61	
Louisville & Nashville R. R. Co.	4,937	5,037	46,480	46,710	230	.....	0.49	9.4	9.3	171.09	185.51	114	128	0.0778	0.0719	1.08	1.26	
Mobile & Ohio R. R. Co.	1,122	1,122	10,776	11,422	646	.....	5.99	9.6	10.2	224.80	230.03	085	098	0.0670	0.0627	1.00	1.25	
Nashville, Chattanooga & St. Louis R. R. Co.	1,231	1,231	10,189	9,975	.....	214	2.10	8.3	8.1	151.00	154.78	127	131	0.1054	0.1019	1.16	1.33	
Norfolk & Western Ry. Co.	2,036	2,042	47,483	46,973	.....	510	1.07	23.3	23.0	269.28	272.18	098	100	0.0552	0.0540	1.23	1.28	
Norfolk Southern R. R. Co.	843	860	3,329	3,277	.....	52	1.56	3.9	3.8	85.63	87.32	198	215	0.1930	0.1514	1.22	1.31	
Seaboard Air Line Ry. Co.	3,084	3,106	17,629	17,919	290	.....	1.65	5.7	5.8	151.28	158.08	115	109	0.1098	0.1099	1.02	1.25	
Southern Railway Company	7,033	7,031	47,161	47,130	.....	31	0.07	6.7	6.7	354.61	361.43	104	118	0.0842	0.0834	1.05	1.16	
Virginia Railway Company	503	504	7,196	7,929	733	.....	10.19	12.3	15.7	354.77	361.43	104	113	0.0942	0.0932	1.24	1.56	
Total	28,070	28,300	231,705	231,543	.....	162	0.07	8.2	8.2	184.78	192.56	116	117	0.0991	0.0962	1.09	1.26	
CENTRAL CLASSIFICATION—																			
Chicago, Ind. & Louisville R. R. Co.	618	621	6,703	6,741	38	.....	0.57	10.8	10.8	135.74	128.80	147	159	0.0730	0.0765	1.45	1.57	
Cincinnati, Hamilton & Dayton Ry. Co.	1,015	1,003	9,449	8,592	.....	857	9.07	9.3	8.6	123.16	125.30	117	102	0.0582	0.0549	1.27	1.19	
C. C. & St. Louis R. R. Co.	2,381	2,385	31,254	30,989	.....	266	0.85	13.1	13.0	162.80	165.00	100	094	0.0651	0.0631	1.33	1.17	
Grand Rapids & Indiana R. R. Co.	575	575	3,056	2,900	1,988	.....	156	5.10	5.3	93.82	93.44	093	094	0.0707	0.0738	0.97	0.87	
Lake Erie & Western R. R. Co.	906	900	2,681	4,669	1,988	.....	74.52	2.9	5.2	121.27	125.06	059	080	0.0656	0.0682	0.59	0.89	
Michigan Central R. R. Co.	1,800	1,903	25,032	24,114	.....	918	3.67	13.9	13.4	149.00	147.00	091	089	0.0708	0.0675	1.21	1.04	
New York, Chicago & St. Louis R. R. Co.	523	523	11,435	11,341	.....	94	0.82	21.9	21.7	206.00	202.00	073	066	0.0661	0.0614	1.21	1.06	
Pennsylvania Company	1,757	1,758	58,925	60,274	1,349	.....	0.22	33.5	34.3	78.76	73.46	153	153	0.0584	0.0586	1.50	1.53	
P. C. & St. L. Ry. Co.	1,472	1,489	29,920	29,920	.....	467	1.56	20.3	19.8	115.13	119.99	099	095	0.0667	0.0624	1.14	1.03	
Pere Marquette R. R. Co.	2,322	2,314	15,868	15,916	48	.....	0.30	6.8	6.9	166.42	173.11	117	107	0.0882	0.0861	1.44	1.27	
Vandalia R. R. Co.	910	917	8,330	8,330	.....	.....	2.59	8.9	9.1	111.90	115.14	098	100	0.065	0.0617	1.10	1.07
Total	14,279	14,288	202,443	203,319	876	.....	0.43	13.3	14.2	133.09	133.48	104	103	0.0632	0.0632	1.20	1.15	
WESTERN CLASSIFICATION—																			
Archison, Topeka & Santa Fe Ry. Co.	10,961	11,136	65,230	63,297	.....	1,933	2.96	5.9	5.7	292.25	316.68	097	085	0.1007	0.0974	0.89	0.79	
Chicago & Alton R. R. Co.	1,033	1,032	13,803	13,604	.....	199	1.44	12.4	12.1	172.63	182.52	123	117	0.087	0.0866	1.56	1.48	
Chicago & Eastern Illinois R. R. Co.	1,283	1,282	26,004	25,078	.....	926	3.56	20.3	19.6	150.43	145.10	200	212	0.0510	0.0530	2.30	2.44	
Chicago & North Western R. R. Co.	8,071	8,108	65,093	67,401	2,308	.....	3.55	8.1	8.3	143.85	153.87	193	126	0.104	0.108	1.21	1.30	
Chicago, Burlington & Quincy R. R. Co.	9,264	9,366	65,157	65,514	357	.....	3.55	7.1	7.0	265.91	268.51	098	099	0.075	0.077	1.04	1.05	
Chicago Great Western Ry. Co.	1,496	1,428	10,643	10,978	335	.....	3.15	7.1	7.7	217.65	216.75	100	105	0.072	0.0729	1.07	1.14	
Chicago, Milwaukee & St. Paul Ry. Co.	9,681	10,053	63,361	61,958	.....	1,403	2.21	6.5	6.2	244.79	248.37	092	089	0.066	0.0680	0.97	0.97	
Chicago, Rock Island & Pacific Ry. Co.	8,205	8,330	45,674	44,247	.....	1,427	3.12	5.6	5.3	219.50	222.77	101	114	0.072	0.072	1.03	0.93	
Chicago, St. P., Minn. & Omaha R. R. Co.	1,748	1,753	11,911	11,388	.....	1,427	3.12	5.6	5.3	219.50	222.77	101	114	0.072	0.072	1.03	0.93	
Colorado & Southern R. R. Co.	2,583	2,571	17,936	16,431	1,485	.....	4.39	6.8	6.6	143.05	151.93	177	114	0.092	0.0880	1.04	0.99	
Denver & Rio Grande R. R. Co.	627	626	3,196	3,055	.....	1,505	8.40	5.7	5.7	126.78	130.77	176	158	0.1201	0.1033	1.17	1.21	
Great Northern Railway Co.	7,528	7,528	55,394	55,779	385	.....	0.70	7.4	7.1	224.59	246.18	126	147	0.069	0.0790	1.69	1.69	
Illinois Central R. R. Co.	4,769	4,770	59,437	63,863	4,436	.....	7.46	12.5	13.4	240.83	249.25	104	116	0.065	0.065	1.55	1.55	
Kansas City Southern Ry. Co.	827	836	7,567	7,162	.....	419	7.53	6.7	6.2	238.77	249.38	077	071	0.0649	0.0649	1.35	1.35	
Kansas City Southern R. R. Co.	1,646	1,646	7,259	5,148	.....	97	1.34	4.4	4.4	155.01	166.29	110	099	0.074	0.074	1.01	0.94</	

COMPARATIVE SUMMARY OF FREIGHT CARS IN SERVICE ON RAILROADS OF THE UNITED STATES—1900 AND 1915

Note.—Narrow-gauge cars excluded.
Non-revenue cars excluded.
Company freight included.

COMPARATIVE SUMMARY OF FREIGHT CARS IN SERVICE ON RAILROADS OF THE UNITED STATES—1900 AND 1915																		
Note.—Narrow-gage cars excluded. Non-revenue cars included. Company freight included.	Miles		Freight equipment		In-		De-		Per cent of freight cars		Average length of haul		Per 1,000 rev. ton miles		Rate per ton mile (Dollars)		Frt. cars per \$1,000 ft. earnings	
	1900	1915	1900	1915	1900	1915	1900	1915	1900	1915	1900	1915	1900	1915	1900	1915	1900	1915
NEW ENGLAND RAILROADS—																		
Boston & Maine R. Co.	1,787	2,302	12,240	23,410	11,180	22,340	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Boston & Albany R. Co.	1,787	2,302	12,240	23,410	11,180	22,340	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Bangor & Aroostook R. Co.	354	625	3,091	5,299	3,091	5,299	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Central Vermont R. Co.	513	1,220	3,061	5,777	3,061	5,777	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Central New York R. Co.	816	2,005	3,586	7,152	3,586	7,152	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Maine Central R. Co.	2,008	6,688	34,029	75,381	41,352	85,040	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
N. Y. N. H. & H. R. Co.	5,478	6,688	34,029	75,381	41,352	85,040	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
TRUNK LINE RAILROADS—																		
Baltimore & Ohio R. Co.	3,179	4,535	61,708	85,040	23,342	37,811	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Buffalo, Rochester & Pittsburgh R. Co.	472	586	8,555	17,402	8,555	17,402	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Central R. Co. of New Jersey	639	681	15,002	23,721	8,719	17,402	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Central R. Co. of Ohio	1,476	2,369	17,270	34,029	17,270	34,029	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Chesapeake & Hudson Company	665	909	13,030	23,721	8,719	17,402	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Delaware, Lackawanna & Western R. Co.	947	1,204	27,287	51,791	27,287	51,791	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Erie Railroad Co.	2,104	2,257	46,225	51,791	46,225	51,791	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Lehigh Valley R. Co.	1,382	1,442	34,954	44,974	34,954	44,974	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
New York Central Railroad Co.	4,318	5,609	79,157	129,603	50,446	85,040	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
New York, Ontario & Western Ry. Co.	480	568	8,555	17,402	8,555	17,402	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Pennsylvania Railroad Company	3,716	4,541	80,385	150,293	69,908	117,583	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Philadelphia & Reading Ry. Co.	1,000	1,200	31,824	59,014	22,559	41,352	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Western Maryland R. Co.	279	659	6,816	13,030	6,816	13,030	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Total	20,657	26,257	422,290	648,339	226,949	378,241	26,257	26,257	26.57	26.57	166.73	166.73	111	111	0.0625	0.0642	1.56	1.15
SOUTHERN CLASSIFICATION—																		
Atlantic Coast Line Ry. Co.	1,759	4,698	5,378	28,619	23,241	48,666	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Central of Georgia Ry. Co.	1,196	1,924	5,041	9,907	4,866	9,907	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Florida East Coast Ry. Co.	3,007	5,037	23,402	46,710	23,402	46,710	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Louisville & Nashville R. Co.	1,876	1,122	5,389	11,422	6,033	11,422	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Mobile & Ohio R. Co.	1,189	1,231	5,328	9,975	4,647	9,975	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Nashville, Chattanooga & St. Louis R. Co.	1,551	2,042	18,656	46,975	28,317	51,791	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Norfolk & Western Ry. Co.	147	860	4,059	9,277	2,868	6,033	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Norfolk Southern R. Co.	3,106	7,031	8,335	17,919	9,584	20,316	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Seaboard Air Line Ry. Co.	6,306	7,031	26,814	47,130	20,316	37,929	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Southern Railway Company	18,635	28,304	98,752	231,543	132,791	279,291	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Total	546	621	5,440	6,741	1,301	1,301	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
CENTRAL CLASSIFICATION—																		
Chicago, Ind. & Louisville R. Co.	546	621	5,440	6,741	1,301	1,301	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Chicago, Hamilton & Dayton Ry. Co.	1,891	2,385	15,484	30,989	15,505	30,989	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
C. & C. St. Louis R. Co.	582	575	3,015	2,900	1,115	1,115	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Grand Rapids & Indiana R. Co.	725	900	5,449	4,669	9,895	8,800	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Lake Erie & Western R. Co.	1,635	1,803	14,219	24,114	14,219	24,114	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Michigan Central R. Co.	1,315	1,523	6,743	11,341	4,598	9,895	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
New York, Chicago & St. Louis R. Co.	1,306	1,758	43,967	60,274	16,307	23,721	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Pennsylvania Company	1,407	1,489	12,884	20,453	16,569	23,721	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
P. C. & St. L. Ry. Co.	1,821	2,314	7,944	15,916	7,972	10,035	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Pere Marquette R. Co.	1,727	917	5,922	8,330	2,408	7,431	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Vandalia R. Co.	11,895	14,288	129,005	263,319	74,314	132,791	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Total	7,426	11,136	27,486	63,297	35,811	85,040	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
WESTERN CLASSIFICATION—																		
Atchafalaya, Topeka & Santa Fe Ry. Co.	7,426	11,136	27,486	63,297	35,811	85,040	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Chicago & Alton R. Co.	855	1,282	8,206	15,484	16,307	23,721	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Chicago & Eastern Illinois R. Co.	711	810	40,846	67,401	26,327	43,967	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Chicago & North Western R. Co.	5,219	9,366	42,287	65,514	33,196	54,931	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Chicago, Burlington & Quincy R. Co.	7,546	14,288	57,821	109,788	29,218	54,931	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Chicago, Great Western Ry. Co.	6,423	10,033	35,740	64,247	27,057	43,967	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Chicago, Milwaukee & St. Paul Ry. Co.	3,647	8,330	17,150	44,247	27,057	43,967	37.81	19.3	18.7	194.81	201.49	128	110	0.068	0.0412	0.00470	1.96	1.20
Chicago, Rock Island & Pacific Ry. Co.	1,557	1,753	10,253	11,388	9,100	10,253	37.81	19.3										

Measures for the Improvement of L. C. L. Service*

Several Discussions of Methods Used for Reducing the Cost and Increasing the Efficiency of This Work

THE papers printed below, received in the contest on The Handling of L. C. L. Freight, discuss essential features in the successful solution of this increasingly important railway problem.

PAYING ATTENTION TO THE DETAILS

By C. A. Pennington

Assistant Superintendent, Cheasapeake & Ohio, Huntington, W. Va.

The selection and organization of labor together with systematic co-operation between the freight house and office forces offer the widest field for advancement in the handling of business. At Louisville we have tried white forces, joint white and black gangs and straight negro labor. The latter has been found the most successful under a variety of conditions. In charge of a competent foreman who thoroughly understands his nature, the negro is a satisfactory and a satisfied worker. We work them principally under the tonnage system, but pay a few extra gangs of less experienced men on an hourly rate. Conditions make this necessary and this also offers an incentive to the new men to become proficient in their work in order to secure promotion.

One highly important thing that has an influence on net revenue as well as on the condition of the freight house is the handling of the O S and D work. Platform and office men should be alive to the necessity of keeping the O S and D freight properly sorted out, tagged and listed. It requires constant energetic effort to control this situation and the man in the local office whose activity sometimes causes him to be branded as a pest is the fellow who shows results. A good yardmaster does not sleep well with a bunch of "no bills" in his yard and the agent should feel the same way about his "overs." Meetings of O S and D men of all lines in a terminal to discuss overs and shorts and the work in general are of considerable value.

A check should be kept to locate the sources of errors and of bad loading. There are many ways of doing this, all of which are more or less effective. It is well to keep a careful record of errors against individual clerks when a comparison will show up the unsatisfactory men. So far as laborers are concerned, we prefer to hold the gang responsible as a unit, just as we pay the gang rather than the individual. All of these units are thoroughly impressed with this responsibility and the better men help eliminate any inefficient labor.

The correct handling of shipping tickets on the platform and proper loading constitute just one step in the right direction. Trouble lurks in the wake of the bill clerks and the work of these men must be closely watched and a check made to locate errors. The initial of the bill clerk should go on each way bill and all errors should be tabulated so as to show the party at fault and also to ascertain the nature of the errors. An undue number of mistakes along one line will often disclose the reason for the trouble and enable the remedy to be applied. Billing machines have eliminated to some extent the chance for error in reading way bills, but machines will not correct senseless abbreviations and incor-

rect descriptions or the ordinary errors of arithmetic. It is economical to make a check of the outgoing billing. Agents should push a campaign of education among shippers to have them furnish legible billing with full information to obviate the chance of incorrect interpretation.

Robbery and petty thieving drain the treasury. The more or less unimportant shortages under original seals should be recorded with a view to locating the possible source of trouble. Several "possibles" make a "probable" and a few of the latter constitute a reasonable certainty. Packages should be watched on receipt at the warehouse. It is no great trick for a driver to remove a small parcel without detection in the rush of business. This can be traced back with careful study. It is not a bad idea to open cases of whiskey or similar freight occasionally, especially if there is any slight evidence of tampering with the boxes. Records should be kept of the position in the train of cars showing shortage, the nature of shortage, the location of the crew, etc. This may locate and prevent some trouble "within the family."

There are many little things around a freight house that can be so handled as to reduce the general expense. Money can be saved on warehouse trucks if they are given attention. These are sometimes allowed to go to pieces for want of minor repairs. A missing bolt today may mean a new truck next week. In many cases no skill is necessary to remedy the trouble. Incidentally, we plainly brand our trucks. Some drivers have deplorably bad memories especially when commercial and railroad trucks are so similar, but fortunately, second hand dealers prefer not to handle branded trucks. Old lumber can often be salvaged to advantage. Cleats on car doors are very discouraging to the ordinary thief, especially the water tank and steep grade variety. Some expense is attached to cleating cars, but here is where the usual man of odd jobs can save some money by preparing scrap lumber for cleats during his spare time.

Employees should be taught to deal courteously with the public and they should also be encouraged to watch all the little odds and ends—to save a dollar here and there. It is often the small things taken together that make for failure or success of economical operation.

THE MAN ELEMENT

By A. E. Aumiller

Chief Clerk to Agent, Pennsylvania Railroad, Harrisburg Transfer, Pa.

In a study of methods of handling l. c. l. freight, we must start at the gates of the shipper, or rather in his shipping room. A spring that is contaminated may cause trouble all along the course of the particular waterway of which it is a part and a bad condition at the shipper's plant may leave a trail of trouble for the railroad and a dissatisfied consignee. To remove difficulties of this nature, allow the agent at the shipping point one day each month to have his patrons visit his station in order that he may explain current rulings. It is probable that the points can be driven home a little stronger at the station. Show the shipper who invariably delivers goods late in the day, what it means to prepare the necessary forms and load his freight, and it is probable that he will expedite the future handling of his invoices and the movement of his freight to the freight house. Take the shipper into the cars being loaded and show him the difficulty in stowing a piece of freight with insufficient crating in a car that must or should carry an average of 7 or 8 tons

*The two prize-winning papers received in this contest were published in the issue of November 26, 1915, page 1005. Five papers on the subject of "Starting Right in Handling L. C. L. Freight Traffic" were published in the issue of January 7, page 5; four papers on the subject, "Reducing the Cost of Handling L. C. L. Freight" were published in the issue of February 25, page 359, and four papers on the subject, "The Reduction of Over, Short and Damage Claims" were published in the issue of June 23, page 1542.

of freight. Touch every phase of the interest between your patrons and yourself and don't forget to go to your patron's place of business and take an active interest in helping him out wherever possible.

The most efficient force possible to secure at a station should be employed at the receiving door as a great many claims, or the channels for them, have been instituted because of neglect and oversight in checking freight from the city to the warehouse or platform. When there is a question regarding the condition of a shipment at the receiving platform, it should be settled at once by the agent or his duly authorized representative to the entire satisfaction of the shipper and the railroad, as many such cases are passed over with resulting complication during transit and a claim eventually.

Too much care cannot be exercised in the choice of men to stow or load freight into cars for as a usual thing they have the last handling of the package. They should be to a considerable extent conversant with routing and loading as represented at that station, and where an arbitrary set-up is arranged daily it should be the duty of each stower to examine marks on his freight as this can be done in the average station without the expense of additional help. Secure good men to check and receive freight and to stow it in the cars, even if it does cost more, and an improvement in handling freight will have been accomplished.

If a new man is employed see that he understands his work or has some knowledge of it before you pass him out of your hands into the crowd. He may have the "metal" in him, but you may never profit by it because he did not get started right. A little coaching and careful handling, no matter what caliber of man you are obliged to employ, will make a decided improvement. Athletes call for good "coaching work," and they need it; so does a railroad business.

No case of erroneous handling should be overlooked. Much neglect and poor work is due to the fact that cases are not followed with a view to placing the responsibility definitely.

An effort should be made to examine all inbound loaded cars to ascertain the extent of the damage owing to improper loading. In no case should one neglect to make a report of such improper loading through the proper channel. It can be determined by a man of limited experience whether the bad condition was due to improper loading or to rough handling by the crew. At the end of the year a summary of errors for the year, chargeable to each of the stations, should be made and submitted to the division superintendent or through such a channel that it will effectively reach the agent at fault. We should be able to join in this without feeling that we are knocking our fellow employees, for it will save dollars and cents and the more we can save the more we get.

If you pay special attention to any one feature, let that be to astray freight, for herein lies the monster that saps the life out of the l. c. l. credit column. If you are over a shipment for Washington, D. C., get it there with the least possible delay. A check of freight houses should be made daily and not a pound of freight should be allowed to remain on the floor without an account therefor. It gets into the freight house so easy, and sometimes is there for so long a time that the consignee has lost hope and ordered a consignment to take its place and the railroad pays the bill more often than it avoids it.

There are many phases of this subject, but, after all, it is the careful supervision, the selection of a bit of the best from this and that and indefatigable exertion and attention to detail, a careful leading of our men and the institution among our men and associates of a special interest in the affairs of the company by humane efforts and interest and by the remuneration that grasps or holds the attention of the majority—the bonus system—that brings results.

COSTS OF FREIGHT HOUSE OPERATION

By Henry A. Goetz, Chicago, Ill.

The economical handling of freight upon any single platform depends upon a number of factors, the principal ones being the length of the platform, the possibility of using machinery, and the system of pay under which the men work.

In the combined in and outbound house, the labor and trucking expense is lowest, because inbound business can be unloaded from the car to the platform in the morning and the same car can be reloaded outbound in the afternoon. In many cases, we find outbound merchandise in one end of the car before all of the inbound freight has been removed. This condition permits a trucker to carry a load to the car and take a load from it, never making a trip without a load. For this reason, a combined house is the most economical in the labor cost of operation. But such houses are usually found only in the smaller cities or on roads doing a limited business. The increased business of a large city requires a division into distinctively inbound houses and outbound houses.

An inbound house handling 100 tons or more daily should never be less than 60 ft. wide. A total floor space of 150 sq. ft. for each ton handled daily should be allowed. This will give ample room for storage upon the floor until called for. In a house of a size up to 200 tons and 500 ft. in length, the two-wheel truck is the most economical, because the trucking distances are short, and the trucking, checking and delivery cost should not exceed \$0.15 per ton. Many houses of this size are operating at \$0.10 per ton.

When, however, the tonnage handled begins to exceed 300 tons, requiring 45,000 sq. ft. of platform, and which if 60 ft. wide, would be 750 ft. long, the hand trucking cost will run up to from \$0.35 to \$0.40 per ton. At this stage we can begin to see economy in machinery.

An outbound house should be 30 ft. wide and should allow for 40 sq. ft. of platform for each ton handled daily. Thus, a house handling 600 tons would require 24,000 sq. ft., and if 30 ft. wide, would need to be 800 ft. long. This will spot 120 cars, of six strings, with 20 in each string, allowing five tons to each car. By using the two and four-wheel trucks as now practiced, the manual labor cost per ton runs from \$0.30 to \$0.40 per ton. There seems a great disparity in this, for some foremen show an average of 6 tons per day per man, while others show 13 tons.

Two houses in Chicago, with platforms over 1,000 ft. long and a labor cost of over \$0.40 per ton, have been trying out the motor truck. In the beginning, the attempt was made to place the load upon the power truck, but in this attempt it was soon found that no appreciable saving was effected. Not until a number of trailers were hooked together into trains and transported by a tractor, was the problem of economical handling solved. The most economical procedure in an outbound house is to load the four-wheeled trailers at the receiving doors and push them out to a fixed runway. A tractor hitches on to four to six trailers in one train, dropping off some trucks along the route and taking on others. The trailers dropped off are pushed into the proper car for unloading by the stevedore and his helper and then returned to the teamster's receiving side of the platform.

Small shipments, destined to many points along the road, are placed on one trailer, and pushed by hand (if distances are short); each shipment being taken off in turn and left at the car door until the stower finds time and place for it in its proper car. It is estimated that fully 90 per cent of the trailer trucks carry full loads for some specific car. This procedure carries out the drop-truck system in an ideal manner. It will pay big dividends to provide an ample number of trucks (say about 125 trucks for 600 tons handled, or one truck to each five tons of business). A surplus of

trailer trucks permits unloading from a dray direct to the trailer, thus saving one handling.

In one house, where an ample supply of trucks is provided, the teamsters themselves have placed their entire load upon trailers, assorting the shipments at the same time, by using a truck for each shipment. At first thought, this would seem to have been a favor to the road, but the facts are that, by assorting the load upon the trailer trucks, the teamsters were able to see if their loads checked up, and at the same time, it expedited the count and acceptance of the shipment by the receiving clerk. Another saving in time to both the teamsters and the road can be effected by placing a sign on the outside, near the receiving door, designating the stations to which the cars stationed opposite the door are destined.

By giving extra and prompt attention to the teamsters who back up to the doors most convenient to the spotted cars to which the bulk of their load is destined, one can direct, control and relieve the congestion now caused by promiscuous deliveries at any door, regardless of the destination. At a Louisville, Kentucky, outbound station 1,800 ft. long and 60 ft. wide, at which the above plan of directing the teamsters is carried out, the laborers are paid 13½ cents per ton and earn \$2 to \$2.25 per day.

IMPROVING LOCAL WAY FREIGHT SERVICE

By H. M. Gain

Trainmaster, Grand Trunk, Belleville, Ont.

The organization necessary to handle l. c. l. traffic properly and promptly is necessarily large as compared with that necessary to handle car load traffic. The ratio of expense is likewise high, aside from the liability of loss, damage and pilferage. From an operating point of view the main objects to attain are: promptness of delivery, regularity of service, good order delivery and economy in handling.

A review of what has been accomplished on this territory may not only prove of interest, but may be found workable elsewhere. The time was when complaints regarding delays in handling and damage to consignments reached a critical stage and special means were taken to effect improvement in this branch of the service. Investigation showed many causes for delay and damage, including a lack of geographical knowledge on the part of shed and trainmen in loading cars, resulting in re-handling freight at intermediate transfer points; lack of standardization in daily loading; indifference of trainmen whose only ambition seemed to be to load freight in any convenient car, thereby necessitating transfer at terminals; careless handling and trucking; careless stowing and rough handling of equipment.

The indifference of trainmen was no doubt brought about by conditions existing at the time. It was a daily event for trainmen to handle many "pedler" cars in their trains which they ought not to have handled. Such cars would contain one or two consignments for delivery on their territory, the bulk of the contents being for more distant districts. This frequently necessitated rehandling an entire car to get out the shipments required not only subjecting freight to extra handling and damage, but placing improper work on way freight crews, expensive delays to trains and serious delay to freight for more distant districts. The trainmen in return had little or no regard for the loading of freight at local stations and upon arrival at the end of the run way cars had to be sent to the transfer shed, frequently being delayed at the terminal by the accumulation of other transfer cars awaiting readjustment and consolidation. It was found determined that a considerable lack of knowledge and in some cases indifference existed at transfer sheds, freight not being handled with regard to time or district loading.

To overcome these difficulties a thorough study was made of every station on the territory as well as at the principal stations off the territory to learn to what extent l. c. l. freight

was being loaded and the destination of shipments. A loading and movement schedule was worked out to meet requirements on the territory, every agent and way-freight conductor being supplied with a copy, which was posted in a conspicuous location in the freight sheds and cabooses.

The object of making up this schedule was to give the best possible despatch to the business, to eliminate as far as practicable the movement of this traffic on way freight trains for points off the originating district, the loading by both shed and way freight crews in district order, the avoidance of transfer sheds en route for the reconsolidation of freight and for the guidance of employees. In the elimination of transfer points deliveries to adjacent and distant districts were advanced 24 hours.

This system insures way freight trains leaving their terminals handling assigned way cars containing only freight destined for delivery on their territories, while upon arrival at their destinations assigned way cars are delivered at the terminals loaded in district order and ready to move out of those terminals to adjacent or distant districts, without adjustment or delay. This means light loaded cars in some cases, but the service is maintained and made dependable.

Since the inauguration of this system there has been effected a reduction of 583 transfer cars monthly at two transfer stations, in turn saving car miles and permitting a reduction in force in these sheds, notwithstanding an approximate increase of 25 per cent in the amount of l. c. l. business handled.

At first difficulty was experienced in getting employees to regard this loading and movement schedule as a strict essential daily feature of their work and it was therefore necessary to devise means to keep check on the service. To keep a check on shed loading, conductors are supplied with forms on which they report to the trainmaster all improper loading. In every case the offending station is dealt with. Likewise, in order to keep a check on improper loading by way freight crews, transfer sheds are supplied with forms on which a daily report is made to the trainmaster, showing all cars handled at the shed, the hour and date of placement, the point of origin and destination of contents and the hour and date removed from the shed. In every case improper loading on the part of train crews is made the subject of a personal interview. Conductors are also provided with a form on which they make a report to the superintendent of all shorts, overs and damages occurring on each trip and in addition the agents make immediate reports in like manner, aside from the usual short and over reports. This enables quick action to be taken in the location of shipments. In addition, all stations are visited periodically by the trainmaster to locate short, over and astray freight, as well as to check the receipt, delivery and general handling of shed freight.

SOME PRACTICAL IDEAS ON THE HANDLING OF L. C. L. TRAFFIC

By C. I. Heckman

Lake Freight Agent, Lehigh Valley, New York, N. Y.

Time must be the first consideration in the successful handling of l. c. l. freight. Once this has been determined between stations on a given railroad, and to points on foreign roads as well, the second consideration presents itself. This is the preparation of a schedule of cars sufficient to handle this business every day and deliver it at destination or to a transfer platform for rehandling and consolidation, strictly within the time allotted. Once these two important features have been accomplished other details that go to make efficiency in freight handling present themselves.

One of the most important features is the proper packing and marking of freight, that it may safely withstand ordinary handling and transportation shocks, and by its marks, reach the customer for whom it is intended. The best method

to follow in this respect is to place at each freight station and transfer platform a requisite force of practical men to check the condition of the packages, and the manner and the method of marking, and to assist the receiving clerks in reconciling it with the shipping bills as to description. Dealing direct with the shipper, when business not in accord with the provisions of the official classification is offered, with a display of the requisite discretion, surely means a better understanding on the part of the shipper, and it will serve to minimize, if not entirely eliminate, trouble from this source.

For checking outbound business received from wagons, in fact for checking all freight where time and the method of wheeling permit, the single ballot system undoubtedly is a meritorious one, while for checking inbound l. c. l. freight the blind tally system is recommended.

The inbound house should be sectionized for the location of the freight according to consignee, as it comes from the car, the best practice being to first assign necessary space for the large carting concerns, and then for the big receiving houses, the balance being assigned to the miscellaneous trade, beginning with section "A," and locating the freight according to the initial of the consignee. In the outbound house, if it can be done, the designation of certain doors for the reception of business for given points is recommended.

While the sectionizing of the inbound house in the manner described brings about long trucking, with the improved methods available this trucking distance can be minimized. Also there is the advantage of overcoming a second handling of a good share of the freight by permitting it to remain on trucks, facilitating prompt delivery and more than offsetting the additional distance. In the outbound house the movement of the freight on to trucks and thence quickly into cars saves here a second handling, and the combined operations will reflect creditably by a material reduction in labor force.

LOADING L. C. L. FREIGHT

By H. F. Kaho

District Agent, Missouri Pacific, Kansas City, Mo.

Less than carload freight yields a high percentage of revenue compared with its tonnage, but a large percentage of that revenue is paid for the handling, loss, and damage to this class of freight. Any plan for handling should provide for economical, safe and prompt service. Local freight trains are important, as it has become the custom for merchants to carry small stocks, replenishing them daily from distributing points. Many shippers are therefore more interested in the local freight service than any other. Less-than-carload freight can be distributed within a radius of 200 to 250 miles 24 hr. after it is loaded.

Loading schedules should be made for the entire system, providing for cars to be loaded regularly at all stations where the tonnage permits, showing what cars are to be loaded, the freight to be loaded in each car, where to open and set out cars, and by what train or trains cars are to be handled.

In trying to effect economy in loading cars the aim should be to load to avoid all transfers possible; to secure the maximum car loading; to load the proper class of cars; to load foreign cars in the direction of home and to connections to save per diem and to handle transfer and inbound cars promptly.

The following minimum carloads are in use by some railroads: 3,000 lb. for cars moving in the direction of light traffic on a local district, 4,000 lb. for cars moving in the direction of light traffic within 200 miles, when the car can be released following day, and 7,000 lb. to all points except when loaded from larger stations to transfer platforms or from one transfer platform to another.

Trucking is the largest item in handling l. c. l. freight. Any great reduction in cost must be made in the cost of trucking. Sufficient trucks should be provided that it will

not be necessary to unload freight on the floor, thus saving one handling and utilizing the labor of the transfer men. Four or six-wheel trucks will be found economical, as a greater amount of freight can be loaded on each truck and it can be handled by one man on the ordinary floor.

About 75 per cent of the shipments offered can be loaded on one four or six-wheel truck; this greatly reduces the liability of splitting shipments in different cars. A number of shipments for the same destination or for different destinations may be loaded on one truck if care is taken to see that they are unloaded in the proper car. Experienced men should be assigned to handling trucks containing mixed destinations.

The bonus system is used by several roads. Freight is divided into classes, based on kind, weight, bulk, etc. Bonus payments for the quantity of work handled apply to check clerks, callers and truckers, a standard being made of the number of pounds per hour to be handled by each class of labor. Following is the standard used by one road:

	Class One	Class Two	Class Three	Class Four	Class Five
Checker	12,000 lb.	4,600	8,300	14,700	9,000
Caller	12,000 lb.	4,600	8,300	14,700	9,000
Trucker	3,000 lb.	1,150	8,300	3,700	2,300

Bonus is earned when more than 66.7 per cent of the above amounts are handled per hour, beginning with .01 per cent of the monthly earnings for 66.8 per cent and increasing to 20 per cent for 100 per cent of the above.

Bonus for stowing is based on the quality of work, and is determined by the number of hours worked per month and the errors made. A deduction is made for each error in checking, trucking, calling and stowing which in any way has or might have resulted in any unnecessary cost to the company. No deductions are made from regular wages on account of errors. This system has decreased the cost per ton and increased efficiency.

Efficiency should not be sacrificed to economy, as freight properly loaded is a long way on its road to destination and delivery, and freight promptly and properly handled means pleased patrons, fewer claims and increased revenue.

A MINISTER'S VIEW OF THE RECENT WAGE CONTROVERSY*

By Rev. Charles K. Carpenter

Pastor First Methodist Episcopal Church, Oak Park, Ill.

Text—I Thessalonians, 4:11. "Work with your own hands."

This day has come to be recognized as one of the nation's great days. It is finding a place upon many church calendars, and I stand today with thousands of ministers to speak concerning the "Dignity and Divinity of Labor."

If we compare our national holidays to a group of children, we celebrate today the birthday of the youngest of them. As a nation we have a right to be proud of our family. Here is the oldest child we name Prosperity, and whose birthday we celebrate as Thanksgiving Day. This first child was born when the family was poor and destitute, but God favored it with bountiful crops, and out of gratitude for Divine favor then and material blessings since then, we observe this child's birthday year by year.

And there is the next oldest child, named Independence, whose birthday we celebrate on the Fourth of July. This child was begotten in great travail. War clouds hung over the land, blood stained the fields, but a child was born, destined to come to sturdiest manhood, and out of gratitude to God for Providential deliverance, we annually observe this birthday.

And then there is the child Unity, likewise begotten in great travail. For there was quarreling in the family, state had risen against state, and it was uncertain that the nation would continue to exist. Divorce was threatened. And then

*From a "Labor Day" sermon preached on September 3.

there came settlement of difficulties; Unity was born, and out of gratitude to God, year by year, on Memorial Day we observe this birthday.

And now there is another child in the home called Labor, whose birthday we observe in this service. It is late born. Indeed, there has been no need in our family for this anniversary until these recent years. Labor needed no voluntary recognition, its demands were too insistent. "Sailing the seas" is poetry to us, but to those who really sailed it meant the reefing and unfurling of sails by day or night, in winter's blizzard or summer's gale, with Death the ghastly specter sitting always upon the masts. "Leveling the forests" or "breaking the sod" is music to us, but to those who actually did these tasks, it was almost back-breaking, heart-breaking work. If the older persons in this congregation this morning had been playing upon this very spot when they were children they would have seen the passing wagons making journeys of a hundred miles or more, coming to the Chicago market with wheat or livestock or returning with lumber and provisions. Those of us who are but middle-aged can well remember the cradling of the grain and the binding of the sheaves by hand. Then everybody worked, worked all the time, all day and a good share of the night, we can say with little exaggeration. But those times have passed. We have come to ease and comfort and luxury. Inventions and improvements and the fruits of past sacrifices have lifted many of the burdens, have lightened the toil very materially. It is well that emphasis shall be given to this factor of labor so important in God's program for humanity.

Continuing our figure of speech a moment longer we observe that this babe, lusty and powerful, has a severe attack of colic and needs serious attention.

Our country is in an ugly situation. Not only is it panic-stricken, but is being stampeded into doing things that are worse than panic and privation. Boats on the lakes and trains are crowded with people hurrying home from their vacations. That is not so serious, but it indicates the fear that prevails. There are tens of thousands of our soldier boys on the frontier, and if the strike comes they will be starving. There are scores of thousands of babies in our great cities who cannot live on condensed milk as we older ones can; they will die for want of proper food. In a few days the coal and flour and fruit and meat in the cities will be exhausted and the people suffering.

It is an ugly situation, with attending features uglier than the strike itself. I must give heed to these or make my journey alone. My goal is eulogy of those who are toilers. I would speak in praise of the engineer and fireman who make my travel safe; of the gardener who provides me with vegetables; of the wash woman who keeps the clothing clean and neat; of the street sweeper who prepares the path before me. But if I should speak those words without giving heed to the present crisis, you would not give me your attention. This crisis is gripping all our minds. The country is afraid, insulted, ugly-tempered.

If these words of mine are to have weight with you, you must be persuaded that there is no bias or partisanship in them. I have not a word to say as to the merits of the contention. I would not dare to express an opinion without days of thought and masses of evidence. But there are matters involved in this situation more important than the strike or the rights of either of the contending parties. They do not rest upon the contention, they are broader, more fundamental. I am willing to grant, for the sake of argument, that every contention of either party is right. That does not lessen one iota the blunders that have been committed. I am willing to grant the righteousness of the eight-hour law and the demand for higher wages and still insist that the method of procedure has been dangerous and demoralizing to our commonwealth and to the spirit of democracy. Two phases of the situation are particularly dangerous and worthy of our most careful thinking.

The first is that Congress has been compelled to do a thing that it does not know whether it should have done or not. Perhaps what it did was right; the method was absolutely wrong. It is as if a burglar comes to your house, points a pistol at your head and compels you to give him food and money. If he is starving he has a right to food. If his children are sick he has a right to have the services of a physician and nurse and may need the money to obtain their services, but you will not justify the method or believe that such procedure does not imperil the rights of property and life. So Congress has been held up. The President has pointed a pistol at its head and has said that it must pass such a measure within the next few hours. Party organization, appointments to office, political preferment bring great pressure to bear. But our republic is based upon the co-ordination and independence of three departments—the executive, legislative and judicial. And in proportion as the executive trespasses upon another department, no matter how worthy the motive, to that extent our government becomes a monarchy.

The railroad brotherhoods pointed a pistol at the head of Congress and said, "You will pass this bill within the next few hours or the strike will be called, no matter about the results." And no matter how worthy their demands, this is mob law. Again, the dread of business panic added its pressure. Commercial stagnation, privation, hunger, starvation are potent things. I will not mention the selfish item—the desire for re-election. But Congress, held up in this fashion, has displayed the spirit of cowardice that spells the doom of democracy. Democracy is still on trial. It is genuine only as all men are masters and all men are servants. If one man or small group of men or large group of men can hold despotic reign over the nation, we have forfeited our birthright.

The spirit of genuine democracy caused our fathers to exclaim, "not one cent for tribute"; caused Patrick Henry to exclaim, though the stress was greater than now, "Give me liberty or give me death."

These sons who now hold seats in Congress are unworthy of such ancestry. It is their business to investigate, to hear arguments, to debate and deliberate, and without the influence of threat or cajolery, pass such measures as in their judgment the welfare of the country demands. Congress is the servant of no faction, but of the entire nation. It may be that the present measure should be a law. It ought to come in decent, respectable fashion and not by such undemocratic procedure. Such procedure strikes at the vitals of our democracy. The second serious phase of the present situation is the surrender of the principle of arbitration.

As I see it, the President has taken a most unfortunate position in permitting himself to become a partisan and in yielding this principle, fundamental in such a government as ours. I do not bring this word of criticism with gladness. Most of you know my admiration for the President. I have rejoiced at many of the things he has accomplished and I have not hesitated to commend him at certain points where some of you have differed from me strongly. I do not envy the man his position. The burden seems more than man can bear; the pressure must be almost superhuman. He is entitled to our prayers, our sympathy, our loyal support. He is our President, our servant; we are his people. Indeed, this is not meant to be a personal criticism, but a consideration of a very dangerous precedent.

Did I say the President blundered? He should not have permitted himself to become a partisan, though he was perfectly assured that one party or the other was right. That should have been the judgment of a board of arbitration. The executive should have been just as much the guardian of the interests of the railroad presidents as the brotherhood presidents. He should have said to both parties: "The country must not have a strike. This matter must be settled. With both sides properly represented and protected, the differences must be adjusted." Such a position would have given him the endorsement, possibly of neither contending

faction, but of the great mass of our citizenship. The course he followed has lost him the support of many whose sympathies are with the larger group of men, but who see the peril in such course of action.

You say that is compulsory arbitration? Certainly. Here is a method the principle of which is absolutely fair to both parties. You say he cannot compel arbitration? I insist that he can. There may be technicalities that can be cited. There are moral obligations that are resting upon the executive greater than any technicalities. Our soldiers are upon the frontier. If the President had said to both parties, "The train service must continue to care for our soldiers," the citizenship of this country would have held up both his hands. If he had said likewise concerning the food problem, he would have had the same generous support.

You say this is infringing upon personal rights? I reply it is simply considering the larger right, the primal right.

Our trouble has been through the years, and is in this matter that we have ignored the large group involved, the large right, that of the entire nation. The other year, one of the employers said, "The public be damned." Today, by act if not by word, the brotherhoods have said the same thing. It is high time for the public to let it be understood that it is the principal party to be considered. Whatever the railroads are, and whatever privileges the employees enjoy, depend

NEW CENTRAL RAILWAY STATION IN LEIPSIK

The new central station in Leipsic, which the German railway authorities finally completed on December 1, 1915, is the largest and one of the most convenient and luxurious railway terminals in Europe. Its construction was planned approximately 30 years ago and work on it has been going on since 1901. Its cost has been \$32,130,000, the Kingdom of Saxony having paid \$14,280,000 towards this amount, the Kingdom of Prussia \$12,614,000, the city of Leipsic \$4,046,000, and the Imperial Postal Department \$1,190,000.

The city of Leipsic is in the western part of the Kingdom of Saxony, but a short distance from the boundary of Prussia. The station serves as a junction for the passenger traffic of Magdeburg, Thuringia and Dresden, and the larger part of the traffic between Prussia and Saxony passes through it.

The main building of the terminal has a front 984 ft. long and there are two wings, each 295 ft. wide, the entire structure covering an area of 168,000 sq. ft. The train shed covering the station's 26 tracks is covered by a high roof of steel and glass built in the form of 6 arches, the total length of the shed being 785 ft. and its area 710,424 sq. ft. The exterior of the building is trimmed with a yellow-colored sandstone from the quarries of Schona on the Elbe.

It has been asserted that the Leipsic station is the largest



The Central Station in Leipsic

ultimately upon the entire public. The public has been long-suffering enough. Why, suppose a family of ten children; father and mother at one end of the table, the children seated about it. Two of the children at the farther end get to quarreling. They refuse in their anger to pass the food and all the children go hungry. Their ugly talk is disturbing to all. Finally they come to blows and throw chairs at one another, and the other children are struck during the fighting. I suspect laxity of family discipline has not gone so far, but that the father would take the contending parties by the collars and proceed to the woodshed. But why follow the sad scene further? We will close the door. So the nation must insist in these family quarrels that the differences shall be settled by the small groups without compelling the entire household to receive the hurt.

Our national democracy must maintain its self-respect, its authority. It will exist only as it is what it professes, "A government of the people, for the people, by the people." But that means, of ALL the people, by ALL the people, and for ALL the people, and not a minor group.

in the world. It is undoubtedly the largest in Europe, but it is doubtful if it is as large as the Grand Central or the Pennsylvania stations in New York. The station, although perhaps the busiest station in Germany, is not as busy as some of those elsewhere in Europe, notably the Gare St. Lazare in Paris, the busiest in the world, and the Liverpool Street station in London, both of which handle twice as much traffic as the busiest American station, the South Station in Boston.

RAILWAY CONCESSIONS IN CHILE.—The Chilean Government has granted a concession to The Potrerillos Railway Co. (Ltd.) to construct and exploit a branch railway from the Chañaral line to the stream of El Barquito, and official approval has been given to the transfer from William Braden to the Potrerillos Railway of a concession to construct and operate a branch line from the State Railway near Pueblo Hundido to the mining district of Potrerillos in the Department of Chañaral. This company has also received a concession of water rights in the river La Ola in the same Department, according to a recent number of the *Diario Oficial*.

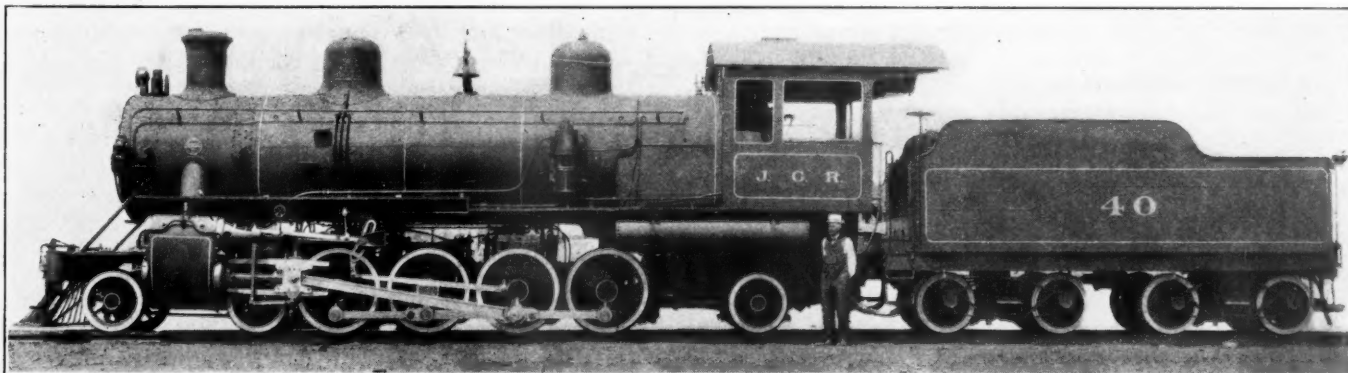
RECENT BALDWIN LOCOMOTIVES FOR EXPORT

Among the locomotives recently built for export by the Baldwin Locomotive Works, are two for the Jamaica Government Railway and 10 for the Canton-Hankow Railway of China (Hupei-Hunan Section), which are of more than ordinary interest because of the conditions under which they will operate and the details of their construction.

The Jamaica Government locomotives are of the Moun-

tain type and is controlled by a hand reverse lever. Piston valves, 11 in. in diameter, control the steam distribution. The frames are of the bar type, and the general design is in accordance with American practice. Westinghouse automatic brakes are applied, and the equipment includes two 9½ in. pumps.

The Chinese locomotives are divided into three classes. Four of the engines are of the Ten-wheel type for passenger service, four are of the Consolidation type for heavy freight service, and the remaining two are tank engines of the 0-6-0



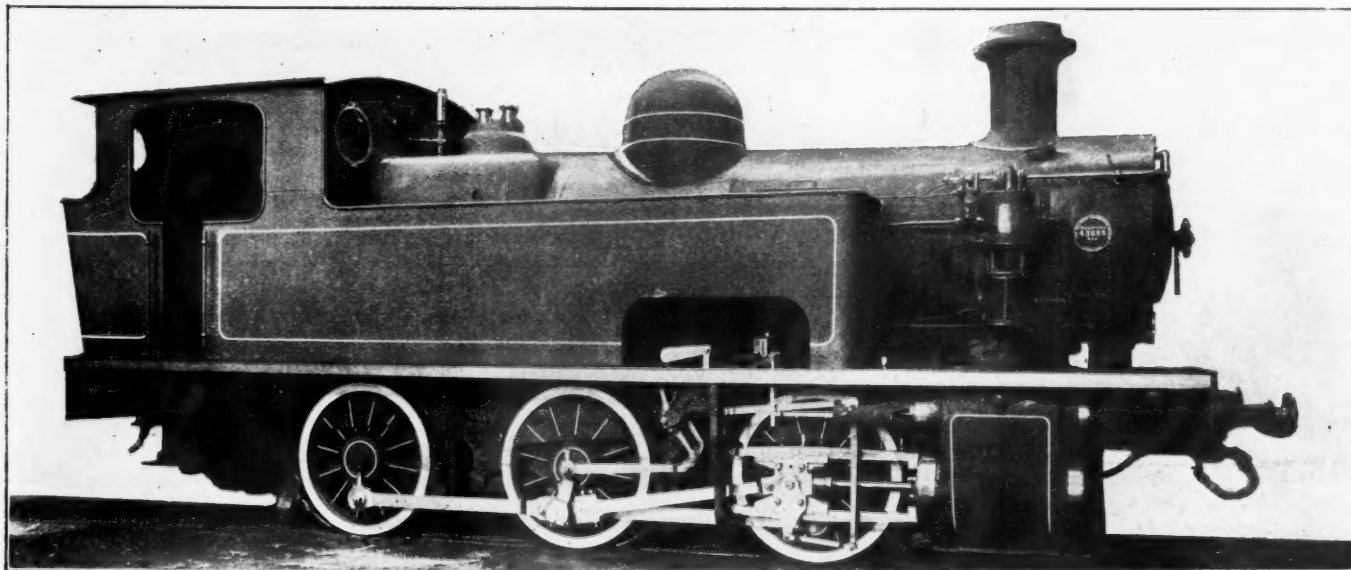
Mountain Type Locomotive for the Jamaica Government Railways

tain (4-8-2) type, and are designed for freight service on grades of 3⅓ per cent, combined with uncompensated curves having a minimum radius of 288 ft. In many of their leading dimensions, these locomotives are similar to a number of Baldwin Mikado type engines previously constructed for this road by the same builders. The tractive effort exerted by both types is 33,000 lb. The track gage is standard.

In order to enable the new locomotives to easily traverse the sharp curves on the line, the first and third pairs of driving wheels have plain tires, and the bolster of the front truck

type, for switching service. These are all standard gage locomotives, built with interchangeable details where practicable. The materials conform to specifications issued by the American Society for Testing Materials. The drawings were prepared by the builders, but the designs are strongly suggestive of foreign practice.

The passenger locomotives exert a tractive effort of 23,600 lb., based on a mean effective pressure equal to 85 per cent of the boiler pressure. The boiler is of the Belpaire type, with a steel firebox, rocking grate and Schmidt superheater.



Six-Wheel Tank Engine for Switching Service, Canton-Hankow Railway

is allowed a lateral swing of 4 in. on each side of the center line. The rear truck is of the Rushton type, with inside journals. A lateral play of ¾ in. between rails and flanges is allowed on all wheels having flanged tires.

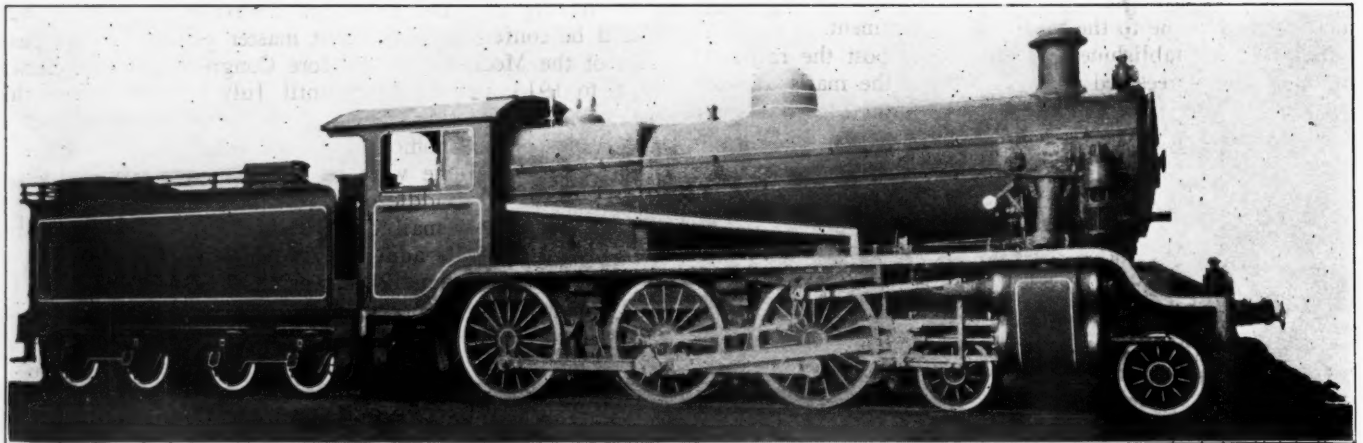
The boiler has a straight top with a wide firebox, and is equipped with a Schmidt superheater and a fire-brick arch supported on angle irons. The boiler shell and inside firebox are constructed of steel plate throughout. The valve gear is

The frames consist of steel plates, 1¼ in. thick. Each frame is made in one piece, and a substantial system of cross bracing is applied to insure lateral stiffness. This bracing includes a long steel plate, placed in a horizontal position between the first and second pairs of driving wheels. The driving springs are underhung, those of the second and third pairs of driving wheels being connected by equalizing beams. The engine truck has a swing bolster and plate frames.

The truck springs are not equalized, as the frames are suspended directly from them.

The cylinders are cast separately from the saddle. Piston valves 11 in. in diameter control the steam distribution, and the valve gear is of the Walschaert type with screw reverse mechanism. The equipment includes Westinghouse air brakes, one Weir's feed-water pump and heater, and one Metcalf's vertical restarting hot water injector. The driving journals and cylinders are lubricated by mechanical oil pumps. The design is so arranged that the Lockyer balanced throttle valve, manufactured in Great Britain, can be installed.

Traction effort	33,500 lb.	23,600 lb.	19,600 lb.
Weight in working order..	159,600 lb.	159,700 lb.	100,500 lb.
Weight on drivers	143,400 lb.	113,900 lb.	100,500 lb.
Weight on leading truck..	16,200 lb.	45,800 lb.	.....
Weight of engine and tender in working order...	261,000 lb.	261,000 lb.	.....
Wheel base, driving	16 ft.	14 ft. 9 in.	12 ft.
Wheel base, total engine...	24 ft. 3 in.	28 ft.	12 ft.
Wheel base, engine and tender	52 ft. 4 1/4 in.	55 ft. 7 1/4 in.	12 ft.
Cylinders			
Kind	Simple	Simple	Simple
Diameter and stroke	22 in. by 26 in.	21 in. by 26 in.	17 in. by 24 in.
Valves			
Kind	Piston	Piston	Piston
Diameter	11 in.	11 in.	8 in.

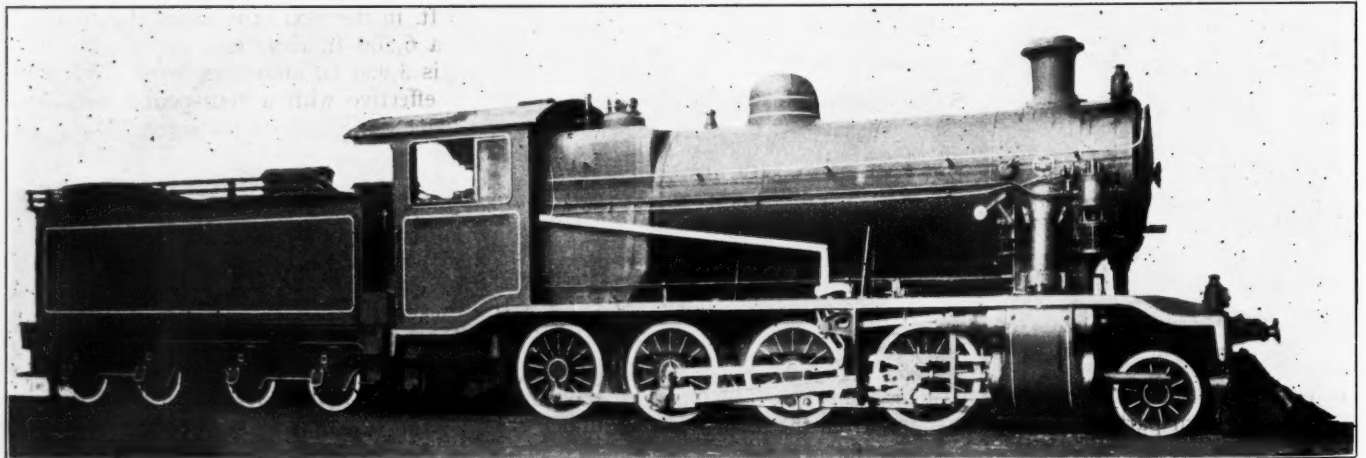


Ten-Wheel Locomotive for the Canton-Hankow Railway

However, as these throttles could not be secured in time, Baldwin throttles were temporarily fitted and the Lockyer valves will be installed subsequent to the arrival of the engines in China.

In general construction and equipment the Consolidation engines are similar to the Ten-wheelers. In order to obtain sufficient grate area, the firebox in the Consolidation type is placed above the rear pair of drivers, while in the Ten-

Driving, diameter over tires	Wheels		
	51 in.	66 in.	48 in.
Style	Boiler		
	Belpaire	Belpaire	Belpaire
Working pressure	160 lb.	160 lb.	160 lb.
Tubes, number and outside diameter	161—2 in.	137—2 in.	182—2 in.
Flues, number and outside diameter	24—5 3/4 in.	22—5 3/4 in.	.....
Tubes and flues, length...	14 ft. 4 in.	15 ft. 7 1/2 in.	10 ft. 6 in.
Heating surface, tubes and flues, sq. ft.....	1,682	1,596	993



Canton-Hankow Railway Consolidation Type Locomotive

wheel type it is between the frames. The Consolidations exert a tractive effort of 33,500 lb.

The switchers exert a tractive effort of 19,600 lb. The water supply is carried in side tanks, and the fuel in a coal box placed back of the cab. In general construction, these locomotives are similar to the road engines.

The leading dimensions of the locomotives for the Canton-Hankow Railway are given in the following tables:

General Data			
Type	2-8-0	4-6-0	0-6-0
Gage	4 ft. 8 1/2 in.	4 ft. 8 1/2 in.	4 ft. 8 1/2 in.
Service	Freight	Passenger	Switch
Fuel	Bit. coal	Bit. coal	Bit. coal

Heating surface, firebox, sq. ft.	157	185	103
Heating surface, total, sq. ft.	1,839	1,781	1,096
Superheater heating surface, sq. ft.	420	404	.....
Grate area, sq. ft.	39.7	31.8	19.5

ALLOWABLE STRENGTH OF WELDED JOINTS.—According to the A. S. M. E. Boiler Code, "the ultimate tensile strength of a longitudinal joint which has been properly welded by the forging process shall be taken as 28,500 lb. per sq. in., with steel plates having a range in tensile strength of 47,000 to 55,000 lb. per sq. in."—Power.

"WANTED—A SQUARE DEAL"

By Maurice H. Lundy

The railroads are entitled to a square deal in connection with the added burden of parcel post. At the time this is written, there are few indications in the political handling of this question of that common honesty that the government demands of the railroads and big business in general. In 1914 the post office department estimated that during the year 1915 600,000,000 parcel post packages would be handled, yielding a revenue to the post office of \$60,000,000. The correct figures for the year 1915 would show about 1,000,000,000 parcel post packages handled with a corresponding increase of revenue to the post office department.

Before the establishment of the parcel post the railroads in this country received for transporting the mails at least one-fifth of the post office revenue. Assuming that their service is no greater in handling the parcel post than in handling other mail, this increased revenue of \$60,000,000 to the post office department should in all fairness mean increased payments of at least \$12,000,000 to the carriers.

This article will endeavor to demonstrate that the good showing of the post office department at the present time is made by methods that would be called reprehensible and dishonest if practiced by a private individual or corporation.

The railroads have been forced to carry the added matter brought into the post office through the parcel post, and have received no adequate compensation for the extra work. It is easy enough to make money when everything is coming in and nothing going out.

In every department of the federal service, and especially in the post office department, costs are never estimated as they would be by a private individual or corporation that desired to avoid bankruptcy. The post office department has been able to show a surplus in the last year, but it does this by neglecting to take into account the millions of dollars that have been spent for post office buildings and other equipment. It is easy to prove that the post office department is losing money every day in its operation of the parcel post service, and that the losses would be disastrous to any private corporation if the railroads were getting what honestly belongs to them for services rendered.

The post office department expects a gross revenue of about \$60,000,000 from parcel post for the current year. It is able to give this service by paying the carriers less than they should receive and by making up any deficits in operation out of funds in the treasury which Congress will have to appropriate for the purpose.

There is no new system of honesty, and the oldest and latest definitions of the word and its application alike require that the government compensate fully and reasonably the railway companies and star-route carriers for the admirable and beneficial service they are rendering the country in this transportation of parcel post mail matter.

In the western part of the United States, from the eastern slopes of the Rocky Mountains to the Pacific ocean, from Canada to the Mexican boundary, is a territory approximately 1,500 miles long by 1,000 miles wide; this is not quite half, but more than one-third of the United States. It is traversed by three great ranges of mountains for its entire length. Railroads are few, and a considerable population must depend upon the star-route mail carriers, who have been confronted with the onerous and unjust exactions of the post office department in the delivery of parcel post. In July, 1914, contracts on star-routes for the ensuing four years were let on the basis of a flat bid for the first and second class mail. Letters, papers and similar mail are first and second class. Though the requirements vary on different routes, I will cite requirements on one route—Boise, Idaho, to Idaho City. This is a fair average of

conditions on all star-routes at the present writing. The carrier has quite an accurate knowledge of the quantity of first and second class mail to be carried, and bids on that basis accordingly are required to transport up to 600 lb. of parcel post matter. The contractor can also bid on that intelligently.

If parcel post matter weighs over 600 lb. he is allowed double the regular time to transport it, and is allowed extra compensation therefor. The service is daily. Since July, 1914, there have been but few complaints of the inadequacy of compensation made by star-route carriers. The safest guides to the future are the happenings and events of the past, having in mind the large discretionary powers that would be conferred on the post master general by the passage of the Moon bill now before Congress. Let us glance back to 1913 and 1914 up until July 1 and observe the benevolent application of the discretionary powers at the service of the post office department. The mail contracts in force at that time were let for the most part in 1910 and ran until the middle of 1914. They called for the delivery of ordinary mail and between 1910 and 1914 the parcel post load was added to the backs and trucks of carriers without additional compensation. Was it honest to use a contract made before the parcel post bill was passed, or when the maximum to be sent by parcel post was 11 lb., to raise that limit to 50 lb., especially in the mountain region where bulk and weight count more in transportation than in the open and level country? Was it honest to compel mail carriers to carry additional loads without additional compensation?

To illustrate the injustice done star-route carriers I will give the experiences of several that came under my observation. In 1910 the contractor on the route from Stites, Idaho, to Elk City, agreed to carry the mails daily for \$5,400 per year. The route from Stites to Elk City is through a mountainous country. The distance is 51 miles, and in making this trip the carriers on this route were compelled to cross two mountain ranges, and in winter and spring the roads at times were almost impassable. Stites lies at an altitude of 1,200 ft., the road runs up hill for 26 miles to an altitude of 6,900 ft., then drops to 4,000 ft. in the next nine miles, then makes a nine mile climb to a 6,500 ft. elevation, and finally drops to Elk City, which is 3,950 ft. above sea level. When the parcel post became effective with a four-pound maximum, the post office department allowed the contractor \$270 additional per annum for such parcels as he might be required to handle.

In August, 1913, when the maximum weight of parcels was raised to 20 lb. he was granted a further allowance of \$2,494, making his compensation \$8,164 per annum. Later the maximum weight of parcels was advanced to 50 lb., and the carrier was delivering groceries, meats and other supplies in bulk packages often weighing as much as 50 lb. each. In order to handle this mail he was compelled to put on extra teams and drivers, and he received no extra allowance under the 50 lb. maximum. The actual cost of handling the mails on this particular route was \$55 per day, which does not make any allowance for profit to the carrier. The department paid the contractor \$22.40 a day for his service, hence he lost \$32.60 each day that he operated under his old contract. His contract was signed up until June 30, 1914, and the department refused to allow him to withdraw, but compelled him to continue his service notwithstanding he was losing more than he was paid by the department.

Private contracts of this nature could not be enforced, and it was not right for the government to drive men into bankruptcy by enforcing old contracts made before the existence of parcel post in this country. In a letter to the junior Senator from Idaho the contractor said: "I have everything I own mortgaged to the limit, and my credit is exhausted; I have been able to tide over a while, but I will

have to have a larger allowance, or I will not be able to carry out my contract." Because of the Senator's protest the post master general sent his fourth assistant to investigate the Stites-Elk City route, and other routes in the Rocky mountains, to ascertain whether or not the government should increase the allowance.

The contractors on the route from New Meadows to Grangeville, Idaho, 1910 to 1914, distance 92 miles, notified the post office department that unless they were given immediate relief in way of compensation commensurate with their labors and expense in carrying the mail and parcel post over their route, they would throw up the contract. The expense of this firm after the inauguration of the parcel post, and the increase to 50 lb., ran up to \$40 per day. On account of the increased parcel post, it was compelled to reject passenger and express business; therefore its daily receipts were practically confined to the \$16.04 which it received from the government.

Another illustration as to how the parcel post was bankrupting the star-route carriers is furnished in the case of the contractor carrying mail from Mountain Home to Rocky Bar and Atlanta, Idaho, a distance of about 64 miles, from 1910 to 1914. The contractor had a four-year contract and his bondsmen appealed to secure a readjustment of this contract by the post office department, but, if I am rightly informed, the department declined to grant any relief, thus forcing him into bankruptcy. When he took this contract he owned an outfit, including horses, stage coaches, harness, etc., worth \$7,000. Because of the burden imposed upon him by the parcel post he lost his outfit, and, furthermore, was obliged to sink \$1,500 in addition which he secured as a loan from his bondsmen. The route covered was in a mountainous country where roads were bad and it was impossible to maintain a regular schedule. For failure to maintain schedule the contractor was subject to further penalty. The contractor explained that he would have been able to handle the mails under his contract but for the parcel post, but that after the department raised the weight limit on parcel post matter to 50 lb., people living along the route ordered most of their supplies, such as flour, meat, hardware, etc., by parcel post from Boise. The local merchants could not compete with Boise prices and this increase in the mails compelled the contractor to employ extra men and horses to handle the mails. The post office department refused to grant him extra allowance for the additional service rendered. One might say that he should have looked out for the additional weight under the new parcel post. True enough, but he did not expect it to be raised to 50 lb. and that flour, hams and bacon, and, in fact, everything but heavy farm machinery, would be going through the mail. The disastrous experiences of the carriers on the three routes I have mentioned were not rare or isolated cases of the government's injustice. Practically every carrier on the star-routes of the west endeavoring to fulfil their "pound of flesh" contracts, was facing financial disaster. People living east of the Rocky Mountains do not realize the nature or the variety of commodities that go by parcel post in the far west, nor the roundabout routes necessary to reach many post offices by rail and stage. They know nothing of the risks involved, nor the lives lost annually on the treacherous mountain trails. The original purpose of the parcel post was to bring the producer and consumer together to lower the cost of living—a very worthy purpose. Mail order houses in Chicago send catalogues by freight in car lots to certain points in the west and these are distributed by parcel post from those centers. An Idaho milling firm sent 4,600 lb. of flour by parcel post and this had to go by stage 70 miles after leaving the railroad. Another firm sent 1,700 lb. of bacon along with 4,800 lb. of assorted groceries. Such shipments were unthought of at the time the parcel post law was enacted.

The people of the United States expect the parcel post to be made the most efficient possible. They know its advantages and appreciate them fully, they know this efficiency is maintained by the work of the railway companies and star-route carriers that carry the mail, and they favor a just compensation for this service to the public. Nothing should be left to the discretion of any official. The carriers of Uncle Sam's mail desire the question of their compensation kept out of politics, and ask for nothing but what they are entitled to—a square deal.

BAGGAGE LIABILITY LAW MODIFIED

The Cummins amendment to the Interstate Commerce law, approved August 9, is No. 183. It repeals a large part of the Cummins amendment of March, 1915 (*Railway Age Gazette*, March 12, 1915), and reads in substance as follows:

"Provided, however, That the provisions hereof respecting liability for full actual loss, damage, or injury, notwithstanding any limitation of liability or recovery or representation or agreement or release as to value, and declaring any such limitation to be unlawful and void, shall not apply, first, to baggage carried on passenger trains or boats, or trains or boats carrying passengers; second, to property, except ordinary live stock, received for transportation concerning which the carrier shall have been or shall hereafter be expressly authorized or required by order of the Interstate Commerce Commission to establish and maintain rates dependent upon the value declared in writing by the shipper or agreed upon in writing as the released value of the property, in which case such declaration or agreement shall have no other effect than to limit liability and recovery to an amount not exceeding the value so declared or released, and shall not, so far as relates to values, be held to be a violation of section ten of this Act to regulate commerce, as amended; and any tariff schedule which may be filed with the commission pursuant to such order shall contain specific reference thereto and may establish rates varying with the value so declared or agreed upon; and the commission is hereby empowered to make such order in cases where rates dependent upon and varying with declared or agreed values would, in its opinion, be just and reasonable under the circumstances and conditions surrounding the transportation. The term 'ordinary live stock' shall include all cattle, swine, sheep, goats, horses, and mules, except such as are chiefly valuable for breeding, racing, show purposes, or other special uses."

RAILWAY EXTENSION IN CHILE.—Permission to construct a branch line from the Antofagasta-Bolivia railway, uniting the station Salinas with the nitrate deposits, Los Penitentes and Carabana, has been granted to Emilio A. Carrasco. The government has also granted to Alfredo Aldunate and Felix von J. Marteville permission to construct and exploit an electric railway between La Union, Rio Bueno, and Filuco, and a branch line from Rio Bueno to Lago Rauco.

THE ENGLISH CHANNEL TUNNEL.—An advocate of the English Channel tunnel recently gave some figures as to the cost and possible earning capacity of the tunnel. The estimated cost of construction is \$80,000,000. It is calculated that of the 2,000,000 passengers who crossed the channel in both directions during the year, at least 65 per cent, or say 1,300,000, would use the tunnel, and if each were charged 10s. (\$2.40) this would amount to an income of \$3,120,000 a year. To this it was hoped to add \$325,000 for baggage, \$200,000 for postal services and \$4,000,000 for freight traffic, the total estimated revenue being, therefore, \$7,645,000. Running expenses were put down at \$2,000,000 per annum, which would leave \$5,645,000 as the annual net earnings on the \$80,000,000, or over 7 per cent.

General News Department

The Interstate Commerce Commission has issued a revised set of regulations governing the issuance and recording of passes, effective on January 1, 1917.

The Denver & Rio Grande has been found guilty of violation of federal laws in regard to safety appliances, and fines aggregating \$1,600 have been imposed on the company.

Fire at the Lehigh Valley terminal at Perth Amboy, N. J., destroyed more than 500 feet of an 825-foot pier and 16 cars loaded with ties and clay. The loss is estimated at \$100,000.

Because of the scarcity of men and the impossibility of getting its freight checked in and out, the Canadian Pacific is advertising for 30 women freight checkers to work in its freight house at Toronto.

The Committee of Railroad Stockholders, formed recently to unite railroad investors for mutual protection, has received responses of approval from 2,500 railroad stockholders, including many savings banks, which are large holders.

According to press despatches, 25 Mexican soldiers and 11 passengers were killed when a constitutionalist train was wrecked by bandits claiming allegiance to Carrero Torres. The wreck occurred between San Luis and Tampico, below Cardenas.

The British government, it is reported, has decided that hereafter all mails will be carried over Canadian railways exclusively, and existing contracts with American roads will not be renewed. Much Canadian mail is now transported over American lines.

The westbound Golden State Limited train of the El Paso & Southwestern was held up by six masked men 40 miles east of Douglas, Ariz. The robbers uncoupled the baggage car, and after a half hour's futile attempt to blow open the safe escaped on horses. No passengers were molested.

When the new general revenue law, passed by Congress in the last hours of the session, became effective on September 9, it repealed the stamp tax features of the emergency revenue law which had been in effect since December, 1914, and stamps will no longer be required on parlor and sleeping car tickets and bills of lading.

Contracts have been placed by the Baltimore & Ohio for a tugboat, a steamer lighter and three covered lighters for use in the New York harbor, to cost about \$150,000. In addition to this marine equipment the company has six other lighters and a carfloat under construction, delivery of which is expected at an early date.

Returns from 150 large steam roads operating 192,527 miles, that have reported to the Interstate Commerce Commission for July, show revenues per mile of \$1,379, as compared with \$1,179 for July, 1915, expenses per mile of \$894 as compared with \$785, and net revenue per mile of \$485 as compared with \$394 for July last year.

The railroads of the United States used 128,200,000 net tons of coal in 1915. This amounts to about 24 per cent of the total output. The bituminous mines furnished 122,000,000 tons, which is 28 per cent of their production, and the Pennsylvania hard coal regions supplied 6,200,000 tons, approximately 7 per cent of the total production.

The Grand Trunk has granted an increase in wages of from five to eight per cent to the conductors, baggagemen, brakemen and yardmen in the company's employ. The new schedule agreed upon affects all branches of the operating department except the firemen and engineers. These increases, which date from September 1, will mean an addition to the railway's payroll of about \$500,000 per year.

At the recent Quebec Provincial Exhibition, the Canadian railways played a prominent part. The Canadian Pacific was awarded a gold medal by the exhibition commissioners for its

display of toys suitable for home manufacture. It was also awarded a special diploma for the excellence of its agriculture exhibit. The Canadian Northern and the Grand Trunk had exhibits of sections which they serve.

The Interstate Commerce Commission has issued a summary of the monthly reports for Class 1 roads for the fiscal year ending June 30, 1916, subject to revision, showing that railway operating revenues amounted to \$3,396,808,000; operating expenses amounted to \$2,220,004,000; net revenue to \$1,176,804,000; operating income to \$1,029,243,000; operating revenues per mile, \$14,818, against \$12,678 last year; expenses, \$9,684 against \$8,915; operating income, \$4,490, against \$3,169.

The Interstate Commerce Commission has issued an order postponing from October 1 to January 1, 1917, the effective date of its order of June 6 requiring the equipment of locomotives with high power headlights. Rules 29 and 31 of the order, referring to locomotives in road and yard service, are made applicable to all new steam locomotives put in service subsequently to January 1, and to all steam locomotives given general overhauling subsequent to January 1, and all steam locomotives subject to the rules are required to be equipped in conformity with the rules not later than January 1, 1920.

The Salt Lake & Los Angeles (formerly the San Pedro, Los Angeles & Salt Lake) has issued a circular cautioning its employees of all degrees to follow out its new policy of quiet. "We want to make the Salt Lake Route known as the Road of Quiet," runs the statement. "Nothing adds so much to a journey as a good night's rest; nothing detracts more from the pleasure of traveling than a night's repose interrupted by noise. To be awakened by loud talking, the banging of a truck-handle on the station platform, the cracking of ice into the water coolers, the blasting of a whistle or the calling of signals on an adjoining track is indeed disquieting. Let 'mum' be the word has been passed along over the entire Salt Lake Route."

The Northern Pacific has awarded shorter hours and increases in pay to its telegraphers, thus averting a threatened strike. An average increase of four dollars a month was granted to all men on the system, and operators at the large terminals such as St. Paul, Minn.; Minneapolis; Fargo, N. D.; Helena, Mont.; Spokane, Wash., and Tacoma are given increases from five dollars to seven and one-half dollars. Increases for overtime work for operators on the line outside of the larger terminals range from 30 to 35 cents an hour, and for operators in the larger terminals, 45 to 50 cents an hour. Operators on one-man tricks, who have been working 11 hours, will now work only nine hours. Five hundred telegraphers are affected.

British Railway Strike Threatened

The railway situation arising out of the demands of the men for an increase in wages of ten shillings a week has become increasingly serious. At a meeting of 3,000 railway workers at Cardiff a resolution was adopted providing that unless the demand for an increase was conceded by September 16 all railway work would be stopped in South Wales at midnight the 17th. The resolution also stated the advance in wages should date from July 1, and that the government should give a definite guarantee that in the future it would control the supply of food and regulate prices. The labor leaders are working hard to obtain an agreement without calling a strike, which would be regarded as taking an unfair advantage of the nation in a time of adversity. The argument of the men is that it is as much the business of the government to see that railway workers are as properly fed and clothed as the soldiers in the field, since the railway workers are doing equally important work for victory, and that under existing conditions and the high prices of commodities this is impossible.

Pensions on the Great Northern

Directors of the Great Northern Railway have set aside the sum of \$1,000,000 to endow a pension plan for veteran employees. The new plan will go into effect on September 16, the anniversary of the birth of the late James J. Hill. The appropriation will be invested in bonds, interest on which will be used for pensions, but if the fund thus created proves inefficient, the deficit will be paid out of earnings and included in operating expense. Employees are to be retired at the age of 70, but may voluntarily quit at 65 and receive pensions. The system will take in those employees who have been continuously in service for 20 years or more. For each year of service an allowance of one per cent of the average monthly pay received for the 10 years preceding retirement will be paid, but in no case will the payment be less than \$20 a month nor more than \$75. The plan was worked out by James J. Hill and W. J. McMillan, president of the Veterans' Association.

"Think It Over"

This is the heading of a circular which has been distributed by the Central Committee of Safety, of the Oregon-Washington Railroad & Navigation Company, and which reads:

"It was necessary to sacrifice 585 lives in the Iroquois Theatre fire before the public demanded that theatres be amply protected from loss of life by fire.

"It was necessary to sacrifice 1,517 lives in the sinking of the Titanic before the public demanded that passenger steamships be provided with adequate lifeboat protection.

"Yet the combined loss of lives in these two accidents does not equal one half of the total number of people killed yearly while trespassing on railway tracks in this country. The number of men, women and children killed during the year ending June 30, 1915, was *five thousand eighty-four*.

"How many more must be sacrificed before the public will put a stop to this annual slaughter by demanding an anti-trespassing law?"

New York Street Railway Strike

On August 6 the Public Service Commission settled the New York City traction difficulties by securing the acceptance of an agreement, which definitely provided that all disputes that may arise between the company and the employees in the future on which they cannot mutually agree shall be submitted to arbitration. This agreement did not cover the subway and elevated lines, and members of the Amalgamated Association had a conference with the officers of the Interborough Rapid Transit Company on August 30. According to the report of the investigation made by the Public Service Commission: "It was definitely agreed to by both that the principle of freedom to organize, the principle of freedom from intimidation or coercion, and the principle of arbitration should govern. Although this agreement was not reduced to writing and signed by the parties, it was approved by President Shonts, and was relied upon by both sides in their subsequent negotiations."

Prior to this meeting, however, and after the agreement of August 6, the Interborough officers advised their men to form an organization of their own. Apparently 10,000 of the 11,000 employees voted to carry out this policy, and enter into certain agreements with the Interborough. The officials of the Amalgamated Association insisted that the following clause should be added to the agreements:

Fifth—Nothing in this agreement is to be held to preclude any employee from joining any organization or any union, and will not preclude him from participating in any movement toward the betterment of his working conditions or the increase of his wages; and in the event that he sees fit to join such an organization with such objects in mind, it will not be considered a breach of this agreement.

This caused the trouble, which finally culminated in the calling of the strike affecting the subway, elevated and surface lines on Wednesday evening, September 6. The Public Service Commission, after hearings and investigation, made the following recommendations on September 12:

(1) That the question whether the distribution of the individual contracts constituted a violation of the agreements be referred to arbitration in the manner provided in the agreement.

(2) That the charge that the company sought to secure acceptance of the individual contracts by fraud, misrepresentation, coercion, or intimidation be referred in the same way.

(3) That the parties proceed with the conferences where they left off, and that, in order that friction may be avoided, they agree upon some impartial person to preside, or if they cannot agree, that they permit the Mayor and the Chairman of the commission to name such impartial person, to have no authority to decide, but merely to preserve the parties from further misunderstandings and disagreements, and, further, that such conferences be held in public.

(4) That the strike should be declared off immediately.

The Interborough Rapid Transit Company advised the commission on September 13 as follows:

(1) It cannot arbitrate its right to enter into agreements with 10,306 of its employees out of a total of 11,800, when the employees who have signed are content with those agreements and are endeavoring to carry them out in good faith.

(2) It cannot arbitrate its own good faith in becoming a party to those agreements, when they are definite as to pay and terms, signed by the employees upon the recommendation of their own duly appointed agents, and today are fully accepted by the great mass of our loyal employees.

The New York company advised the commission as follows: "It cannot arbitrate the causeless desertion of its service by its striking employees when their differences with the company were in process of orderly adjustment under the terms of the agreement of August 6, underwritten by the mayor and the chairman of this commission."

The Amalgamated Association officers have agreed to arbitrate. The present situation therefore is a deadlock. The strike has caused much inconvenience, and there have been several accidents and some violence. Both the subway and elevated lines are giving fairly good service, the subway on Wednesday transporting 400,000 more persons in 12 hours than ever before under normal conditions. Service on the surface lines is being gradually improved.

Western Railway Club

The first monthly meeting of the Western Railway Club for the 1916-17 season will be held at the Sherman Hotel, Chicago, Monday evening, September 18. A paper will be presented by W. L. Park, vice-president of the Illinois Central, on the subject of "Preparedness from the Railway Point of View." Mr. Park will discuss the need of preparation of the transportation systems, in case of war, from various angles, including the need of special equipment for transporting the various defense armament, the use to which the standard equipment can be placed and track and terminal facilities. He also will discuss the working out of defense plans as they may arise under the present conditions. Change in the time of meeting should be noted as being on the third Monday instead of the third Tuesday of the month. The Sherman Hotel will be the headquarters during the year, ample space having been provided for the meetings. The usual get-together-dinner will be held from 6 to 7:15 o'clock, and will continue to be a regular function of the monthly meetings.

Railway Fire Protection Association

This association will hold its third annual meeting at the Hotel Astor, New York City, October 3, 4 and 5, 1916.

The morning session, beginning at 10 a. m., October 3, will be devoted to a consideration of the business of the association and will also include an address by the president and an address by E. R. Hardy, assistant manager of the New York Fire Insurance Exchange, on Some Common Difficulties in Prevention Work.

The afternoon session, beginning at 2 p. m., will include the consideration of committee reports on Fire Prevention and Protection in Grain Elevators, and Locomotive Spark and Ash Pan Hazard. At its conclusion an inspection trip will be made to the Delaware, Lackawanna & Western terminals.

The program for Wednesday morning, October 4, will include an individual paper on Automatic Fire Protection, by C. N. Rambo, of the Norfolk & Western, and a committee report on Fire Prevention and Protection in Terminal Classification and Storage Yards. A round table discussion will be held during the luncheon hour.

At the Wednesday afternoon session, committee reports will be presented on Oil-Burning Appliances and Electrical Hazards, and Robert Scott, of the Atlantic Coast Line, will present a paper on Shop Property.

The Thursday morning session will include reports on Fire Prevention and Protection of Wharves and Piers, the association handbook, and a report of the president on statistics. At

2 o'clock in the afternoon an inspection trip will be made through the Grand Central terminal, after which the association will consider unfinished business and the election of officers and members of the executive committee.

The secretary of the association is C. B. Edwards, Seaboard Air Line, Norfolk, Va.

Bridge and Building Convention

The twenty-sixth annual convention of the American Railway Bridge & Building Association will be held at the Gruenwald Hotel, New Orleans, October 17 to 20. From present indications the attendance will exceed that at any previous convention. It is expected that a special train will be provided over the Illinois Central, leaving Chicago on Sunday morning, October 15, stopping at Vicksburg National Park en route, and reaching New Orleans about six o'clock Monday evening. The convention will be in session on Tuesday, Wednesday and Thursday. Friday will be devoted to a trip by special train to the sawmill of the Great Southern Lumber Company, Bogalusa, La. The Bridge and Building Supply Men's Association will give a dinner on Wednesday evening, while the annual association dinner will be held on Thursday evening.

All indications point to an unusually large exhibit by the Bridge and Building Supply Men's Association. Already applications have been received from more firms than were represented at any previous convention. Arrangements have been made for ample exhibit space for all firms desiring representation, and applications should be made promptly to P. C. Jacobs, secretary, care of H. W. Johns-Manville Company, Chicago.

The following firms have already made reservations for space:

American Hoist & Derrick Co., St. Paul, Minn.
Asphalt Ready Roofing Co., New York.
American Valve & Meter Co., Cincinnati, Ohio.
Barrett Mfg. Co., New York.
Bird & Son, East Walpole, Mass.
Phillip Carey Co., Cincinnati, Ohio.
Chicago Bridge & Iron Works, Chicago.
Chicago Pneumatic Tool Co., Chicago.
Jos. Dixon Crucible Co., Jersey City.
Detroit Graphite Co., Detroit, Mich.
Paul Dickinson, Inc., Chicago.
Fairbanks, Morse & Co., Chicago.
Heath & Milligan Mfg. Co., Chicago.
H. W. Johns-Manville Co., New York.
The Lehon Co., Chicago.
C. F. Massey Co., Chicago.
National Roofing Co., Tonawanda, N. Y.
Geo. P. Nichols & Bro., Chicago.
O & C Co., New York, N. Y.
Simmons-Boardman Publishing Co., New York.
T. W. Snow Construction Co., Chicago.
Standard Asphalt & Rubber Co., Chicago.
The Texas Co., Houston, Tex.
Toch Bros., New York, N. Y.
U. S. Wind Engine & Pump Co., Batavia, Ill.

Engineers' Society of Western Pennsylvania

The regular monthly meeting of the Engineers' Society of Western Pennsylvania will be held in the Oliver building, Pittsburgh, Pa., on Tuesday, September 19, 1916. At this meeting a paper on the "Hell Gate Bridge," by J. Lowenstein, engineer, American Bridge Company, New York, will be read.

MEETINGS AND CONVENTIONS

The following list gives names of secretaries, dates of next or regular meetings and places of meeting of those associations which will meet during the next three months. The full list of meetings and conventions is published only in the first issue of the Railway Age Gazette for each month.

AMERICAN ASSOCIATION OF DINING CAR SUPERINTENDENTS.—H. C. Boardman, D. L. & W., Hoboken, N. J. Annual convention, October 19-21, New Orleans, La.
AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York. Annual meeting, October 17, 18, Washington, D. C.
AMERICAN ELECTRIC RAILWAY ASSOCIATION.—E. B. Burritt, 8 W. 40th St., New York. Annual convention, October 9-13, Atlantic City, N. J.
AMERICAN ELECTRIC RAILWAY MANUFACTURERS' ASSOCIATION.—H. G. McConaughy, 165 Broadway, New York. Annual convention, October 9-13, Atlantic City, N. J.
AMERICAN RAILWAY ASSOCIATION.—J. E. Fairbanks, general secretary, 75 Church St., New York. Next meeting, November 15, 1916, Denver, Colo.
AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, C. & N. W., Chicago. Next convention, October 17-19, New Orleans, La.

AMERICAN SOCIETY OF CIVIL ENGINEERS.—Chas. Warren Hunt, 220 W. 57th St., New York. Regular meetings, 1st and 3d Wednesday in month, except July and August, 220 W. 57th St., New York.

ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS.—George W. Lyndon, 1214 McCormick Bldg., Chicago. Annual convention, October 10, 1916, Waldorf-Astoria, New York.

ASSOCIATION OF TRANSPORTATION AND CAR ACCOUNTING OFFICERS.—G. F. Conrad, 75 Church St., New York. Next meeting, December 12-13, 1916, Atlanta, Ga.

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—P. C. Jacobs, H. W. Johns-Manville Co., Chicago. Meetings with American Railway Bridge and Building Association.

CANADIAN RAILWAY CLUB.—James Powell, Grand Trunk, P. O. Box 7, St. Lambert (near Montreal), Que. Regular meetings, 2d Tuesday in month, except June, July and August, Windsor Hotel, Montreal, Que.

CANADIAN SOCIETY OF CIVIL ENGINEERS.—Clement H. McLeod, 176 Mansfield St., Montreal, Que. Regular meetings, 1st Thursday in October, November, December, February, March and April. Annual meeting, January, Montreal.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—Aaron Kline, 841 Lawlor Ave., Chicago. Regular meetings, 2d Monday in month, except June, July and August, Hotel La Salle, Chicago.

CENTRAL RAILWAY CLUB.—H. D. Vought, 95 Liberty St., New York. Regular meetings, 2d Friday in January, May, September and November. Annual meeting, 2d Thursday in March, Hotel Statler, Buffalo, N. Y.

CINCINNATI RAILWAY CLUB.—H. Boutet, Chief Interchange Inspector, Cin'ti Rys., 101 Carew Bldg., Cincinnati. Regular meetings, 2d Tuesday, February, May, September and November, Hotel Sinton, Cincinnati.

ENGINEERS' SOCIETY OF WESTERN PENNSYLVANIA.—Elmer K. Hiles, 2511 Oliver Bldg., Pittsburgh, Pa. Regular meetings, 1st and 3d Tuesday, Pittsburgh, Pa.

GENERAL SUPERINTENDENTS' ASSOCIATION OF CHICAGO.—A. M. Hunter, 321 Grand Central Station, Chicago. Regular meetings, Wednesday, preceding 3d Thursday in month, Room 1856, Transportation Bldg., Chicago.

MAINTENANCE OF WAY AND MASTER PAINTERS' ASSOCIATION OF THE UNITED STATES AND CANADA.—F. W. Hager, Fort Worth & Denver City, Fort Worth, Tex. Next convention, October 17-19, Philadelphia, Pa.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meeting, 2d Tuesday in month, except June, July, August and September, Boston.

NEW YORK RAILROAD CLUB.—Harry D. Vought, 95 Liberty St., New York. Regular meeting, 3d Friday in month, except June, July and August, 29 W. 39th St., New York.

NIAGARA FRONTIER CAR MEN'S ASSOCIATION.—E. N. Frankenberger, 623 Brisbane Bldg., Buffalo, N. Y. Meetings, 3d Wednesday in month, New York Telephone Bldg., Buffalo, N. Y.

PEORIA ASSOCIATION OF RAILROAD OFFICERS.—F. C. Stewart, 410 Masonic Temple Bldg., Peoria, Ill. Regular meetings, 3d Thursday in month, Jefferson Hotel, Peoria.

RAILROAD CLUB OF KANSAS CITY.—Claude Manlove, 1008 Walnut St., Kansas City, Mo. Regular meetings, 3d Saturday in month, Kansas City.

RAILWAY CLUB OF PITTSBURGH.—J. B. Anderson, Room 207, P. R. R. Sta., Pittsburgh, Pa. Regular meetings, 4th Friday in month, except June, July and August, Monongahela House, Pittsburgh.

RAILWAY FIRE PROTECTION ASSOCIATION.—C. B. Edwards, Fire Ins. Agt., Mobile & Ohio, Mobile, Ala. Annual meeting, October 3-5, 1916, New York.

RAILWAY REAL ESTATE ASSOCIATION.—Frank C. Irvine, 1125 Pennsylvania Station, Pittsburgh, Pa. Annual meeting, October 11-13, 1916, Chicago.

RICHMOND RAILROAD CLUB.—F. O. Robinson, C. & O., Richmond, Va. Regular meetings, 2d Monday in month, except June, July and August.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—P. J. McAndrews, C. & N. W., Sterling, Ill. Next annual convention, September 19-22, 1916, Hotel McAlpin, New York.

ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal, Union Station, St. Louis, Mo. Regular meetings, 2d Friday in month, except June, July and August, St. Louis.

SOCIETY OF RAILWAY FINANCIAL OFFICERS.—L. W. Cox, 1217 Commercial Trust Bldg., Philadelphia, Pa. Annual meeting, October 18-20, Washington, D. C.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—E. W. Sandwich, A. & W. P. R. R., Atlanta, Ga. Next meeting, October 19, 1916, Birmingham, Ala.

SOUTHERN & SOUTHWESTERN RAILWAY CLUB.—A. J. Merrill, Grand Bldg., Atlanta, Ga. Regular meetings, 3d Thursday, January, March, May, July, September, November, 10 A. M., Piedmont Hotel, Atlanta.

TOLEDO TRANSPORTATION CLUB.—Harry S. Fox, Toledo, Ohio. Regular meetings, 1st Saturday in month, Boody House, Toledo.

TRACK SUPPLY ASSOCIATION.—W. C. Kidd, Ramapo Iron Works, Hillburn, N. Y. Meetings with Roadmasters' and Maintenance of Way Association.

TRAFFIC CLUB OF CHICAGO.—W. H. Wharton, La Salle Hotel, Chicago.

TRAFFIC CLUB OF NEW YORK.—C. A. Swope, 291 Broadway, New York. Regular meetings, last Tuesday in month, except June, July and August, Waldorf-Astoria Hotel, New York.

TRANSPORTATION CLUB OF DETROIT.—W. R. Hurley, Superintendent's office, N. Y. C. R. R., Detroit, Mich. Meetings monthly, Normandie Hotel, Detroit.

UTAH SOCIETY OF ENGINEERS.—Frank W. Moore, 1111 Newhouse Bldg., Salt Lake City, Utah. Regular meetings, 3d Friday in month, except July and August, Salt Lake City.

WESTERN CANADA RAILWAY CLUB.—L. Kon, Immigration Agent, Grand Trunk Pacific, Winnipeg, Man. Regular meetings, 2d Monday, except June, July and August, Winnipeg.

WESTERN RAILWAY CLUB.—J. W. Taylor, 1112 Karpen Bldg., Chicago. Regular meetings, 3d Tuesday in month, except June, July and August, Grand Pacific Hotel, Chicago.

WESTERN SOCIETY OF ENGINEERS.—E. N. Layfield, 1735 Monadnock Block, Chicago. Regular meetings, 1st Monday in month, except January, July and August, Chicago. Extra meetings, except in July and August, generally on other Monday evenings. Annual meeting, 1st Wednesday after 1st Thursday in January, Chicago.

Traffic News

President Wilson has signed the shipping bill. This authorizes government organization of a corporation or corporations with capitalization of not more than \$50,000,000 to buy or lease ships, and put them in trade if they cannot be leased for operation to private capital.

The Illinois State Public Utilities' Commission has called a conference of railroads and shippers for September 20 to determine ways and means of alleviating the impending car shortage. Representatives of the Illinois State Grain Dealers' Association, the Illinois State Farmers' Association and the railroads operating in Illinois will convene.

The Boston & Albany is making extensive arrangements for handling the crowds expected to attend the National Dairy Show to be held at Springfield, Mass., October 12-21. The Southern Railway is planning to run a special train to this exposition carrying dairy farmers and others interested in the building up of the dairy interests in the South.

According to the Seattle Times, a \$22,000,000 fleet is to be built in Pacific Coast ports for A. U. Andersen & Co., of Copenhagen, Denmark. It will be placed under the American flag and operated in the lumber and general cargo trade from the Northwest. Seattle and Portland have been chosen as headquarters for the fleet. Fourteen vessels have already been contracted for in Pacific Coast yards.

Hearing of the three-cent passenger rate case has been resumed before the Kansas Public Utilities' Commission. Railroads in the state are asking permission to charge three cents a mile on intrastate passenger business. The present rate is two cents. Since the application of the roads was filed with the Utilities' Commission the Interstate Commerce Commission has allowed a rate of 2.4 cents in northern Kansas, and 2.6 cents in southern Kansas on interstate traffic.

Headquarters of the 10 recently appointed farm products agents, who are to work in the field in connection with the Southern Railway's plan of helping farmers find markets for their products are as follows: Frank Shorter, Danville, Va.; George Reese, Greensboro, N. C.; W. J. Sheely, Columbia, S. C.; T. U. Culver, Atlanta, Ga.; R. O. McCord, Macon, Ga.; T. E. Draper, Anniston, Ala.; L. D. Fuller, Huntsville, Ala.; B. M. Anderson, Knoxville, Tenn. They report to chief farm products Agent Roland Turner at Atlanta, Ga.

Car Surpluses and Shortages

The American Railway Association Committee on Relations Between Railroads has issued Statistical Statement No. 20, giving a summary of freight car surpluses and shortages for September 1, 1916, with comparisons.

TOTAL SURPLUSES	
September 1, 1916.....	43,541
August 1, 1916.....	49,753
September 1, 1915.....	191,309

The surplus for August 1, 1916, includes figures reported since the issue of Statistical Statement No. 19.

The total surplus shows a general decrease since the report for August 1.

TOTAL SHORTAGES	
September 1, 1916.....	57,822
August 1, 1916.....	39,991
September 1, 1915.....	6,300

The shortage for August 1, 1916, includes figures reported since the issue of Statistical Statement No. 19.

The increase in the car shortage is general in all classes of equipment throughout the country, with the exception of New England.

The figures by classes of cars follow:

Classes	Surplus	Shortage
Box	19,907	34,529
Flat	2,609	2,481
Coal and gondola	7,079	17,900
Miscellaneous	13,946	2,912
Total	43,541	57,822

Commission and Court News

INTERSTATE COMMERCE COMMISSION

The Interstate Commerce Commission has suspended from September 12 to January 10 a proposed increase in rates on wall board from Chicago, Milwaukee and other points to Ohio river crossings and Bristol, Tenn.-Va.

The commission has further suspended from September 12 to March 12 tariffs increasing refrigeration charges on fruits and vegetables from points in Oregon and Idaho to various interstate destinations. The tariffs had previously been suspended from May 15 to September 12.

The commission has suspended from September 9 to January 8 the cancellation, in a supplement to E. B. Boyd's tariff I. C. C. No. A 638, of the rule providing that where a portion of a shipment has been lost or damaged by a carrier, and a duplicate of such part is forwarded to replace the loss or damage, the freight charges on the duplicate part shall be cancelled.

The commission has suspended from September 17 to March 17 a proposed increase in rates on molasses in carloads from New Orleans, La., to Texarkana, Ark.-Tex., and other points in the same general territory which had previously been suspended from May 20 to September 17.

The commission has further suspended from September 17 to March 17 a proposed increase in the proportional rate on coal originating at mines in Kentucky from Chicago to Red Wing, Minn., and other points in Minnesota, which had previously been suspended from May 20.

The commission has postponed from October 16 to November 16 the effective date of its order in the Business Men's League of St. Louis case, involving passenger fares from Illinois points to St. Louis and to East St. Louis.

The commission on September 1 issued an order allowing carriers in Hawaii to reduce rates and fares on 10 days' notice without special permission. Full statutory notice must be given, however, of any advances unless the commission has allowed a shorter period.

Lumber from Wisconsin Points

Connor Lumber & Land Company v. Akron, Canton & Youngstown et al. Opinion by Commissioner Hall:

Rates on lumber in carloads from Wisconsin points along the shore of Green Bay to central freight association territory and other destinations are found to be dominated by central freight association lines through their car ferry routes across Lake Michigan.

The commission therefore holds that the lower rates from Green Bay, Oconto, Peshtigo and Marinette, Wis., than from Laona, Wis., a point at least 60 miles inland by rail, are not shown to be prejudicial to complainant or Laona. It is further found that Laona, as to shipments of lumber in carloads to the territory of destination, is included in the Wausau group, and that Wausau rates, as applied from Laona, are neither unjust nor unreasonable. (40 I. C. C., 111.)

Rates to Points on the Globe Division of the Arizona Eastern

Graham & Gila County Traffic Association v. Arizona Eastern et al. Opinion by Commissioner McChord:

The complaints attack as unreasonable the rates on certain commodities including canned goods, potatoes, fruit, sugar, etc., from points in California to points on the Globe division of the Arizona Eastern in Arizona, and also the class and commodity rates from certain eastern group territories to the same destinations. After the complaints were filed the carriers published reduced rates from the east which resulted in reductions to the destination points here involved. The commission holds that the rates from California, and those from the east as now in effect, are not unreasonable. The portion of the Southern Pacific's

fourth section application by which authority is sought to continue rates on high explosives from points in California to El Paso, Tex., which are lower than rates to intermediate points, is granted. (40 I. C. C., 573.)

Iron and Steel to Colorado Points

Vulcan Iron Works Company v. Atchison, Topeka & Santa Fe et al. Opinion by Commissioner Harlan:

The commission adheres to its finding in The Iron and Steel Cases, 36 I. C. C., 86, 98, that a rate of 60 cents per 100 lb. on certain iron and steel articles from St. Louis and points taking the same rate to Denver, will be a reasonable maximum through rate for the future; but on the further evidence it is also found that the maintenance of that rate contemporaneously with lower rates on wrought iron and certain other pipe from and to the same points would give to the eastern manufacturers of such pipe an advantage to the prejudice of the Denver manufacturers of riveted and welded pipe. The carriers are required so to readjust their rates as to avoid such prejudice. (41 I. C. C., 76.)

STATE COMMISSIONS

The Public Service Commission of Pennsylvania has approved the merger of all railroads under the control of the Pennsylvania Railroad Company centering in Washington, D. C.

The Alabama Public Service Commission has reduced the switching charges on all business from connecting carriers inbound and outbound to industries on the Belt Railroad of Birmingham from \$5 to \$3 per car.

The Railroad Commission of Georgia has passed an order ending the sale of "penny scrip" October 1. The order specifies that the Louisville & Nashville; the Nashville, Chattanooga & St. Louis, and the Georgia, Florida & Alabama, shall adopt and sell the "Z" mileage, which is on a basis of 2 cents a mile.

Chairman Allison Mayfield and Commissioner Earle B. Mayfield, of the Texas Railroad Commission, were served with papers in the injunction suit brought by the railroads of Texas to restrain the commission from enforcing its freight rate increase cancellation order, a temporary injunction having been granted by Federal Judge Pardee. A hearing is to be held before him September 28 at Atlanta, Ga.

COURT NEWS

Expense of Eliminating Grade Crossings

The New Jersey Supreme Court holds that the provision of the Fielder Act, by which 10 per cent. of the expense of eliminating a grade crossing of a steam railroad used by a street railway may be ordered to be paid by the company operating the street railway, is within the legitimate sphere of legislation under the police power of the state.—Public Service Ry. Co. v. Board of Public Utility Commissioners (N. J.), 98 Atl., 28.

Illinois Public Utilities Commission Cannot Construe Contract Rights

The Illinois Supreme Court holds that the State Public Utilities Commission has no jurisdiction over suits arising out of contract between railroads and shippers, such jurisdiction by the Constitution being vested in the Circuit Court. The construction and validity of a contract between a railroad and a shipper for the construction and use of a track is a judicial question, the determination of which by a court of competent jurisdiction cannot be affected by any action of the commission.—People v. Peoria & Pekin Union (Ill.), 113 N. E., 68.

Crossing Accident—Jury Question

In an action for personal injuries by being struck by an engine it appeared that the plaintiff, on a dark and foggy morning, approached a crossing with his horse and wagon, and stopped, looked, and listened for an approaching train. After due observation he neither heard nor saw one. There were gates and a gateman at the crossing. The gates were up. The railroad met the situation thus presented by proof that the approaching engine bell was rung, and the approach of the engine was discernible from various points at the crossing. The Court of Errors and Appeals of New Jersey held that the issue thus

presented was properly submitted to the jury.—Schnackenberg v. Lackawana (N. J.), 98 Atl., 266.

Upset Price in Foreclosure Sale

In a proceeding to foreclose the mortgage securing the first mortgage bonds on the Western Pacific to the amount of \$50,000,000, the only question was what should be the upset price. One of the parties contended for a price of \$40,000,000, the other for a price not in excess of \$15,000,000. The Federal District Court, Northern District of California, fixed the upset price at \$18,000,000, basing it on the present earning capacity of the road, the value of the unproductive properties, and the bonding power of the properties after the proposed sale.—Equitable Trust Co. v. Western Pacific, 233 Fed., 335.

Regulation of Interstate Demurrage Charges

The Supreme Court of the State of Washington holds that courts are without power to determine the reasonableness of demurrage tariffs duly fixed, published, and filed, such power being in the Interstate Commerce Commission, except in review of the orders establishing the rates. The constitutional question whether a duly fixed, published and filed demurrage tariff imposed on the shipper's own cars while on its own tracks is taking property without just compensation and without due process of law is not independent of the act to regulate commerce, and therefore is to be determined by the commission; and the courts have no jurisdiction to pass on the validity of the demurrage rule prior to an affirmative order of the commission thereon.—Northern Pacific v. Carstens Packing Co. (Wash.), 158 Pac., 721.

Animals Scared by Blowing Off Steam

The Oklahoma Supreme Court holds that the mere unnecessary blowing off of steam from an engine does not constitute in itself lack of ordinary care, but the surrounding circumstances may be such as to require the submission to the jury of the question of lack of ordinary care under the particular facts. The fact that a mule was grazing in a field adjoining the right of way and that steam was blown from the engine, and that such act was likely to frighten the mule did not authorize a recovery against the railroad of damages resulting from such act, unless the men operating the engine saw the mule at or about the time of the act. There is ordinarily no duty on a railroad company to keep a lookout for such animals in the fields adjoining the right of way. Judgment for the plaintiff was reversed.—Rock Island v. Hine (Okla.), 158 Pac., 597.

Shippers Cannot Counterclaim for Damages to Freight In Actions for Interstate Freight Charges

The Federal District Court, S. D. Iowa, holds that under the Elkins act and its amendments a shipper cannot, on being sued by an interstate railroad company for freight charges, counterclaim for damages to goods. To permit counterclaims in such actions would open the door to a renewal of the method of making rebates by allowing fictitious claims for damages to freight. The railroad is required to institute suits for unpaid freight charges, and to perform this duty it must commence action in the district where the shipper resides. Railroads are often compelled to maintain actions in districts, and even in states, far removed from the district in which suits could be maintained against them. Very often the suits are for small amounts, and if the shipper can, by counterclaim, acquire jurisdiction of the carrier for damages to freight, he can force the carrier to spend much more in prosecuting its action for freight charges than the freight charges amount to.—Illinois Central v. W. I. Hoopes & Sons, 233 Fed., 135.

Repairs on Cattle Cars in Transit

If a railroad, on the arrival of a shipment of live stock at a connecting point, makes necessary repairs on cars containing part of the shipment as soon as possible and delivers the whole shipment to the connecting road as quickly as a person of ordinary prudence, similarly situated, would do under the same circumstances, the Texas Court of Civil Appeals holds that it is not liable for a delay in transportation, though the cattle were injured by heating on account of the stoppage. Testimony that

it is the custom of all railroads operating in Ft. Worth not to have employees present in their yards at night ready to make heavy repairs as soon as the necessity therefor was discovered, but depended on calling them whenever their services were needed, should have been admitted. Proof that others, in the same line of business, are in the custom of following the same course, is admissible as tending to show that the method adopted is not negligent, unless the conduct of a business in a certain manner is negligent per se.—*Ft. Worth & Denver City v. Gatewood (Tex.)*, 185 S. W., 932.

Joint Rates

The Chicago & North Western owns a majority of the stock of the Chicago, St. Paul, Minneapolis and Omaha. Its stockholders own nearly all of the remainder. So far as concerned the ultimate power of direction and control, the officers of the two companies are substantially the same. The two roads connect, and are operated as a continuous line. Their location is such that they are not competing lines. Each maintains a separate organization and its legal individuality. As respects shipments made over the two there is a single control ultimately exercised by their common officers. The Minnesota Supreme Court holds that for the purpose of establishing freight rates the two constituted one road, and that the intrastate continuous mileage rates fixed by the Railroad and Warehouse Commission pursuant to the distance tariff law applied, and the commission is without authority to fix a joint rate.—*State v. Chicago & North Western (Minn.)*, 158 N. W., 627.

Cost of Interlocking Plant at Crossing

Under the Illinois statute providing that a railroad seeking to cross another shall bear the entire cost of safety appliances, the Supreme Court of the State holds that the public utilities commission has no authority to permit an electric railroad to cross other roads at a place where interlocking devices are maintained without paying the entire expense of the necessary enlargement of the interlocking plant. An order of the commission, proportioning the expense of constructing a new interlocking plant at a crossing on the basis of the number of interlocking units used by each road and dividing the maintenance expense equally between the roads, was held proper as to those railroads which had already secured crossings, but not as to an electric road, which had not secured a crossing, and which, upon crossing, should be required to pay the increased cost of construction and maintenance of such plant, or one-fourth of the total.—*State Public Utilities Commission v. Illinois Central (Ill.)*, 113 N. E., 162.

Terminal Charges

The owner of a building under construction and the builder had a contract as to furnishing steel for the building, and the builder arranged with the railroad which carried it to store it until used by the owner. The owner became bankrupt and the steel stored was sold by the receiver. The railroad made claim for storage and unloading charges. The Delaware Court of Chancery held that these charges were part of the transportation charges, which the carrier must charge and collect from the owner or consignee, until there is actual delivery, in accordance with its tariff schedules filed. The mere fact that the railroad had accepted less than the full amount due and given its receipt in full did not estop it to collect the sum fixed by the tariffs. The only effect of its doing so was to deprive it of its lien on the property; but it could collect any sum due for storage charges. To avoid liability, the owner was bound to show that by its contract with the builder the latter was ultimately liable for the charges. In the absence of such evidence, the inference arose that the owner was ultimately liable.—*In re Arlington Hotel Co. (Del.)*, 98 Atl., 186.

Excessive Damages for Ejection Reduced

In an action for damages for wrongful ejection it appeared that the plaintiff bought a special round trip ticket properly consisting of the auditor's slip, the going coupon, and the returning coupon. The agent by mistake removed or did not attach the going coupon to the ticket. The conductor declined to receive it for the going trip. He tried to communicate with the selling agent and get the ticket corrected, and, failing to do so, informed

the plaintiff that unless the ticket could be corrected she would have to leave the train. He put her off without violence or discourtesy. The Springfield (Missouri) Court of Appeals held that the company was liable for the ejection. The plaintiff left the train when it was about night, was cold and rainy, carrying a baby, and, with her husband, walked to a hotel, where they remained all night, continuing their journey next morning. It was held that the plaintiff could not recover any sum for the loss of time or for hotel expenses or for tickets purchased by her husband, though the jury might consider the delay in her journey and the length of time she suffered the inconvenience and the mental distress incident to having to leave the train. A verdict of \$500 as actual damages was held excessive, and would not be allowed to stand unless reduced to \$75.—*Ferguson v. Missouri Pacific (Mo.)* 186 S. W., 1134.

Hours of Service Act—Derailment

After the derailment of a freight train, its crew, while awaiting the arrival of a derrick, proceeded about a mile and a half from the point of derailment to a farmhouse, where they left the engine in charge of a watchman and had luncheon and rested under the trees. The Circuit Court of Appeals, Eighth Circuit, holds that, as there was no superior officer present to release them, they were not released from duty within the hours of service act, and that time must be included in determining whether they were on duty for more than the 16-hour period allowed. In any event, however, the railroad would not be liable for the penalty under the act, a derailment being a casualty, and the crew in charge of a derailed train may be required to remain on duty for more than 16 hours.

Without ascertaining when tracks would be cleared, trains were despatched over tracks on which it was known there had been a wreck, so that the crews of the trains were kept on duty for more than 16 consecutive hours. It was held that the fact of the wreck furnished no defense to a prosecution for violation of the act, it being the duty of the railroad's servants to ascertain such facts before despatching trains.

The watchman having refused to watch the engine, claiming that he was afraid of the injector, the fireman volunteered to watch it, and was on duty more than 16 hours. It was held that the watchman's unforeseen insubordination was a casualty excusing the railroad from any violation of the act.—*Denver & Rio Grande*, 233 Fed., 62.

BELGIAN COAL.—The output of coal in Belgium in 1903 was 23,871,000 tons; in 1913 the output had declined to 22,858,000 tons. The production has been practically stationary for the past 20 years. While Belgian coal mining has thus made little or no progress of late, the output of coal in the United States increased between 1903 and 1913 to the extent of 60 per cent; that of Great Britain, 23 per cent; that of Germany, 18 per cent, and that of France, 15 per cent. As the production of pig-iron from Belgian blast furnaces was increasing before the war, it was necessary to import more coal from Germany. Of course the war has utterly disorganized Belgian metallurgy, coal mining, coal importing and other industries.—*Engineering*.

GERMAN SUBSTITUTES FOR COPPER.—War substitutes for the 6 per cent by weight of copper, which on the average goes into the manufacture of a German locomotive, are reported to be in part as follows: The fireboxes and stays, previously of copper, are now made of cast iron. All the smoke and steam tubes and the oiling cocks and thin pipes are of weldless drawn steel. For the rod-bracings, axles, grease-boxes and the bracing parts, the difficulty is believed to have been overcome by using cast iron and a special alloy called flange metal, which is a mixture of tin, lead and antimony. It is regarded as possibly dangerous to use this metal unless the pins and axle journals were previously bushed with white metal. Cast iron was used for piston-boxes, side valve rods, frames and lubricators, lubricator covers and step bearings. Bronze covered with vulcanized rubber, which was the standard metal for the various handwheels, is being replaced by cast-iron wheels covered with ordinary string or jute fabric. German engineers are now experimenting with a new rolling process for preparing the flange metal referred to, having an equivalent of bronze which will dispense with antimony. A question is raised as to the life of such engines.—*Iron Age*.

Railway Officers

Executive, Financial, Legal and Accounting

Ben C. Dey has been appointed general attorney of the Southern Pacific, with headquarters at Portland, Ore., succeeding William D. Fenton, resigned.

Robert S. Parsons, chief engineer of the Erie, with headquarters at New York, has been appointed assistant to the president and chief engineer. A portrait of Mr. Parsons and a sketch of his railway career were published in the *Railway Age Gazette* of January 21, 1916, page 143.

Howard V. Platt, who was elected vice-president of the Oregon Short Line on July 1, 1916, has also been elected first vice-president of the Los Angeles & Salt Lake, succeeding E. E. Calvin, resigned.

Operating

J. E. Stansbury has been appointed trainmaster of the Spokane, Portland & Seattle, with headquarters at Portland, Ore.

John McKay has been appointed service inspector of the International & Great Northern, with headquarters at Houston, Tex.

Patrick R. Leo has been appointed trainmaster of the Northern Pacific, with headquarters at Dilworth, Minn., vice John L. Glasgow, resigned.

J. G. Charland has been appointed trainmaster of the Spokane, Portland & Seattle at Vancouver, B. C., to succeed M. B. Le Bertew, transferred.

F. A. Peil has been appointed assistant to general manager of the Oregon-Washington Railroad & Navigation Company, with headquarters at Seattle, Wash.

L. L. Yates has been appointed general superintendent car department of the Pacific Fruit Express Company, with headquarters at San Francisco, Cal.

H. M. Hallock, general superintendent of the Chicago & Illinois Midland at Taylorville, Ill., has been appointed general manager, with offices at Taylorville, and the office of general superintendent has been abolished.

Charles Sloan Patton, whose appointment as superintendent of the Alabama division of the Seaboard Air Line, with headquarters at Savannah, Ga., has already been announced, was born on April 4, 1871, at Telford, Tenn. Mr. Patton was educated in the public schools and began railway work in 1892 as a brakeman on the Norfolk & Western. He later served as fireman and then as engineman on the same road until November 1, 1901, when he left the service of the Norfolk & Western to become engineman on the Seaboard Air Line. He later served as road foreman of engines, and then as trainmaster until 1905, when he again resumed the duties of road foreman of engines on the same road. In March, 1911, he was promoted to master mechanic, which position he held until his recent appointment as superintendent of the Alabama division of the same road, as above noted.

Announcement is made by W. Morcom, general manager of the Mexican Railway at Mexico City, that the first chief of the Constitutionalist army in charge of the executive power at Mexico ordered the return of the lines, stock and property of the Mexican Railway to that company on August 31. The organization of the different departments is as follows: Transportation—J. R. Hickman, superintendent of transportation, with office in City of Mexico, in place of Manuel Jimenez, deceased; Cristobal Lima, superintendent of the Mexican division, with office at Apizaco; J. F. Trevino, superintendent of the Vera Cruz division, with office at Orizaba. Conservation of track—W. T. Ingram, resident engineer, Mexico City. Traffic—E. G. Wuerpel, general freight and passenger agent, Mexico City. Express and baggage—C. Montiel, superintendent, Mexico City. Accounting—Manuel Merino, accountant in chief, Mexico City.

Treasury—J. W. Hunter, general cashier, Mexico City. F. Ferrer, paymaster, first division of Mexico. M. Magallanes, paymaster second division of Vera Cruz. Sleeping and special cars—H. R. Bradbury, superintendent, Mexico City. Machinery and cars—C. H. Burk, locomotive superintendent, Orizaba. Materials—Paul Steffian, purchasing agent, Mexico City; J. E. Rabago, general storekeeper, Orizaba; M. Figarola, stationery storekeeper, Mexico City. Surgeon—Dr. Luis Morales Cortazar, chief surgeon, Mexico City. Car service—D. Tellez, accountant of cars, Mexico City.

Jesse J. Rounds, whose appointment as superintendent of telegraph of the Delaware & Hudson, with headquarters at Albany, N. Y., has been announced, was born on July 5, 1873, at Clifford, Susquehanna county, Pa. He was educated in the common schools and at a select school in Uniondale, Pa. Mr. Rounds began railway work in December, 1889, as a telegraph operator on the Erie, and in May, 1890, went to the New York, Ontario & Western, as telegraph operator on the Scranton division. He returned to the service of the Erie in September of the same year, and until October, 1899, served consecutively as telegraph operator, dispatcher's copier and extra train dispatcher at Carbondale, Pa. He then went to the Delaware & Hudson at Carbondale, Pa., and in 1900 entered the train dispatcher's office of the D. & H. as a telegrapher. From February, 1902, to February, 1914, he served consecutively as train dispatcher, assistant chief train dispatcher, chief train dispatcher and assistant trainmaster. In February, 1914, he was appointed trainmaster, which position he held at the time of his recent appointment as superintendent of telegraph of the same road, as above noted.

Traffic

Peter Frank Finnegan, whose appointment as general western freight agent of the Baltimore & Ohio, with headquarters at Chicago, has been announced, was born November 4, 1877, at Chicago, Ill.



P. F. Finnegan

He attended in succession the public, grammar and high schools of that city, and later entered Chicago Business College, whence he graduated. In 1895 he entered the service of the Baltimore & Ohio in the transportation department at South Chicago, Ill. In 1900 he was transferred to the traffic department at Chicago, Ill., working through the various clerical positions of this company, and then, being appointed general freight and passenger agent of the Baltimore & Ohio Chicago Terminal at the time of its

acquisition by the Baltimore & Ohio in 1910. In this capacity he was in entire charge of the traffic and industrial departments until September 1, 1916, when he was appointed to his present position.

S. S. Butler, commercial agent of the St. Louis-San Francisco at Houston, Tex., has been appointed general agent, with office at Pittsburgh, Pa.

W. G. Johnston has been appointed commercial agent of the Great Northern, with headquarters at Buffalo, N. Y., succeeding George B. Ogden, transferred.

E. D. Curtis, traveling live stock agent of the Baltimore & Ohio, has been appointed assistant general live stock agent, with headquarters at Pittsburgh, Pa.

Neil Mooney, general agent, passenger department, of the New York Central at Montreal, Que., has been appointed assistant general passenger agent, with office at New York.

J. T. Brooks, commercial agent of the St. Louis-San Francisco at San Antonio, Tex., has been appointed commercial agent, with headquarters at Houston, Tex., succeeding S. S. Butler, transferred.

Edward R. Cunningham has been appointed traveling agent of the Chicago, St. Paul, Minneapolis & Omaha, reporting to A. R. Witherspoon, general agent, with office at Winnipeg, Can.

F. F. Clayton, car service agent of the Los Angeles & Salt Lake (formerly the San Pedro, Los Angeles & Salt Lake), has also been assigned the duties pertaining to the office of general baggage agent, formerly performed by T. C. Davison, resigned.

Sydney J. Lamoreux, whose appointment as assistant general freight agent of the Western Maryland, with headquarters at Pittsburgh, Pa., has already been announced in these columns, was born on July 29, 1884, at Mayville, Wis. He was educated in the common schools, and began railway work on November 1, 1900, with the Wisconsin Central. He served consecutively as night telegraph operator, extra operator and as extra agent. From 1902 to 1903 he was agent for the Wisconsin Central; also express agent at various stations, and then was agent of the Wisconsin Central first at Amherst, Wis., and later at Menasha, Wis. From 1906 to 1909 he served as traveling freight agent at Cleveland, Ohio, of the same road, and then to 1912 as traveling freight agent of the Minneapolis, St. Paul & Sault Ste. Marie. On August 1, 1912, he was appointed general agent of the Western Maryland at Cleveland, Ohio; in December, 1913, he was transferred in the same capacity to Pittsburgh, Pa., and now becomes assistant general freight agent of the same road, with headquarters at Pittsburgh, as above noted.



S. J. Lamoreux

T. Herbert Fee, who has been appointed assistant general freight agent of the Western Maryland, with headquarters at Baltimore, Md., as has already been announced, was born on March 7, 1875, at Baltimore. Mr. Fee was educated in the public schools of Baltimore and began railway work in July, 1891, as a messenger in the general freight and passenger office of the Western Maryland, at Baltimore. He held various positions in the traffic department, including that of chief clerk until April 1, 1905, when he was promoted to division freight and passenger agent at Hanover, Pa. The following December he was transferred to Baltimore, in charge of special work in connection with the Interstate Commerce Commission. On May 1, 1910, he was promoted to freight tariff agent, which position he held at the time of his recent appointment as assistant general freight agent of the same road, as above noted. Mr. Fee's entire railroad service has been with the Western Maryland.

Engineering and Rolling Stock

R. A. Pyne has been appointed superintendent of motive power, eastern lines of the Canadian Pacific, succeeding J. T. Main, transferred.

B. V. Somerville, formerly principal assistant engineer, has been appointed resident engineer of the Pennsylvania Lines West, with headquarters at Detroit, Mich. This is a newly created position.

S. D. Moses has been appointed resident engineer of the Southern Railway, with headquarters at Spartanburg, S. C., succeeding L. G. Wallis, recently resigned to accept service with another company.

Purchasing

F. J. O'Connor has been appointed general storekeeper of the Chicago, Milwaukee & St. Paul, vice G. G. Allen, resigned.

O. H. Wood has been appointed assistant purchasing agent of the Great Northern, with office at Seattle, Wash., succeeding C. L. Bankson, resigned.

Hugh Greenfield, who was recently appointed acting purchasing agent of the Duluth, Missabe & Northern, with headquarters at Duluth, Minn., has been appointed purchasing agent.

N. V. Porter, formerly chief clerk to the division storekeeper of the Wabash, with headquarters at Decatur, Ill., has been appointed division storekeeper on the line between Danville, Ill., and Toledo, Ohio, succeeding E. L. Ensel, resigned.

OBITUARY

O. Skinner, division freight agent of the Atchison, Topeka & Santa Fe, died at Pueblo, Colo., on September 10, of heart disease.

Charles W. Kouns, general manager of the eastern lines of the Atchison, Topeka & Santa Fe, died at his home in Topeka, Kan., September 3, age 62. He was born October 22, 1854, at New Holland, Ohio, where he received his early education. He entered railway service in February, 1871, at a very early age, and was successively from this time to May, 1874, freight brakeman, telegraph operator and agent of the Kansas Pacific. From 1874 to the latter part of 1876 he was despatcher on this same road, leaving it in November, 1876, to become a train despatcher on the International & Great Northern, where he remained until January, 1877. From February to June, 1877, he was car accountant on the Galveston, Harrisburg & San Antonio, resigning this position to take employment with the International & Great Northern as freight conductor. From August, 1877, to November, 1879, he was chief train despatcher, and from November, 1879, to November, 1880, trainmaster of the same road. From February to September, 1881, he was train despatcher of the eastern division of the Missouri Pacific, and from September to October, 1881, chief clerk to the general superintendent of the Texas & Pacific. In October, 1881, he became trainmaster of the International & Great Northern, and held this position until July, 1883, when he was appointed master of transportation of the Galveston, Harrisburg & San Antonio. Subsequently he was assistant superintendent of the Nebraska division of the Union Pacific. From February, 1888, to October, 1889, he was chief clerk to the general superintendent of the Atchison, Topeka & Santa Fe, and from November, 1889, to February, 1901, he was superintendent of car service. In February, 1901, he was promoted to assistant general superintendent on the same road, and held that position until May, 1901. From May, 1901, to April, 1904, he was superintendent of transportation of the entire system. He was appointed general manager of the western lines, with office at Amarillo, Tex., in June, 1905, and remained in this capacity until January, 1907, when he was appointed assistant to the vice-president in charge of operation, Chicago, Ill. He held this position up to April, 1909, when he became general manager of the eastern lines, with headquarters at Topeka, Kan. Mr. Kouns died quite suddenly, having only shortly before returned from Washington, where he was a member of the Conference Committee of the Railways which handled the recent wage controversy with the train service employees.



C. W. Kouns

PROFITABLE RAILWAY.—The railway in the western hemisphere that produces the most revenue to the mile is in Brazil. It is the Sao Paulo Railway, 134 miles long, from Santos, by way of Sao Paulo to Jundiahy. The road carries more than one-half of the world's supply of coffee, and is said to be one of the best managed railways in South America.

Equipment and Supplies

LOCOMOTIVES

THE NEW YORK, CHICAGO & ST. LOUIS has ordered 10 Mikado type locomotives from the Lima Locomotive Corporation.

THE MINNESOTA, DAKOTA & WESTERN has ordered one Consolidation locomotive from the Baldwin Locomotive Works.

THE PERE MARQUETTE, reported in the *Railway Age Gazette* of September 1 as being in the market for a number of locomotives, is in the market for 13 locomotives.

FREIGHT CARS

THE CHICAGO, MILWAUKEE & ST. PAUL is building 1,000 freight cars in its own shops.

THE ATLANTIC COAST LINE is in the market for from 50 to 100 double deck 40-ton stock cars.

THE CENTRAL OF NEW JERSEY has placed an order with the American Car & Foundry Company to repair 250 box cars.

THE AMERICAN REFRIGERATOR TRANSIT COMPANY has given an order to the Mt. Vernon Car Manufacturing Company to repair 300 refrigerator cars.

THE ILLINOIS CENTRAL, mentioned in the *Railway Age Gazette* of July 7 as about to order 500 refrigerator cars, has ordered these cars from the Haskell & Barker Car Company.

THE RUSSIAN GOVERNMENT has ordered 4,000 steel gondola cars of 40-ton capacity from the Bettendorf Company, and is inquiring for additional rolling stock.

WILSON & Co., Chicago, mentioned in the *Railway Age Gazette* of September 1 as being in the market for 75 to 100 8,000-gal. tank cars, has ordered 25 40-ton 8,000-gal. tank cars from the American Tank Car Corporation.

THE NEW YORK CENTRAL has ordered 1,000 steel underframe box cars from the Pressed Steel Car Company, and has ordered 1,000 box cars from the American Car & Foundry Company. The latter is in addition to the 1,000 box cars ordered from the same company and reported in the *Railway Age Gazette* of August 18.

PASSENGER CARS

THE UNION PACIFIC has ordered one private car from the Pullman Company.

THE PHILADELPHIA & READING has ordered 4 cafe cars from the Pullman Company.

THE GREAT NORTHERN is in the market for 125 all steel passenger cars to replace Oriental limited equipment.

THE PENNSYLVANIA EQUIPMENT COMPANY, Philadelphia, Pa., is in the market for one combination passenger and baggage coach and two passenger coaches.

IRON AND STEEL

THE ATCHISON, TOPEKA & SANTA FE has purchased approximately 7,000 lb. of tie plates.

THE DENVER & RIO GRANDE has ordered three steel turntables to weigh 202 tons from the American Bridge Company. They will be installed at Denver, Colo., and at Pueblo.

THE NEW YORK PUBLIC SERVICE COMMISSION, First district, recently opened bids for the supply of special work for the Southern boulevard and Westchester avenue branch of the Lexington avenue subway. The Ramapo Iron Works, New York City, was the lowest bidder at \$11,427.

Supply Trade News

The American Car & Foundry Company has taken an order for 300,000 3-inch shells for the United States Navy Department.

D. R. McVay has been appointed railway sales representative of the Barrett Company, New York City, with headquarters at Cincinnati, Ohio.

B. H. Forsythe, formerly with the Hale & Kilborn Company, has entered the sales department of the Grip Nut Company, with offices in the McCormick building, Chicago, Ill.

The H. W. Johns-Manville Company, New York, announces that Harry Flanagan, formerly with the Grip Nut Company, will represent its railroad department in the Twin City territory.

George M. Judd has been elected secretary of the American Brake Shoe & Foundry Company, to succeed Henry C. Knox, resigned. Mr. Knox will remain as treasurer of the company.

The Chicago Bridge & Iron Works has opened an office in Jacksonville, Fla., in charge of Elwood G. Ladd. This office is in the Florida Life building. It will handle the company's sales in Georgia, Florida and Alabama.

Homer C. Johnstone, formerly with the Midvale Steel Company, has been appointed manager of the steel department of Gaston, Williams & Wigmore, Inc., New York. Mr. Johnstone served for 14 years as manager of the Chicago and New York offices of the Midvale Company.

J. E. Saunders, formerly electrical engineer of the Union Switch & Signal Company, has been promoted to assistant chief engineer. In last week's issue of the *Railway Age Gazette* it was incorrectly stated that D. R. Bell succeeded Mr. Saunders as electrical engineer. C. A. Beall succeeds Mr. Saunders.

The Harrison Railway Specialties Company, Chicago, Ill., has secured an order for Harrison dust guards for the 4,000 freight cars being built by the Bettendorf Company, of Bettendorf, Iowa, for the Russian government. The Harrison guard was passed upon and adopted by the Russian Imperial Railway Commission.

The United States Steel Corporation announces a gain of 66,765 tons in unfilled orders in a month, the total unfilled tonnage on its books on August 31 being 9,660,357 tons, as against 9,593,592 tons on July 31. The tonnage is almost double the business on hand a year ago, the report for August 31, 1915, showing 4,908,455 tons unfilled.

The Magor Car Corporation, New York City, has been chartered in New York with a capital of 7,500 shares, 4,000 shares at \$100 each, and 3,500 shares of no par value. It purposes to carry on business with \$417,500. Its object is to furnish cars, railroad supplies, rails, structures, bridges, etc. The incorporators are Walter F. Purcell, George C. Carey, Bigelow Watts and O. Z. Whitehead.

The Duntley Company, Fishersburg, Ind., has been made the sole western distributor for Hudson Ballata belting and other products of the Hudson Mechanical Rubber Company. The market for this class of belting has been materially increased on account of the war. Leather being in considerable demand by the warring nations has caused an increase in the price of leather belting of about 40 per cent.

The Baldwin Locomotive Works has more employees on its payroll than ever before, the number being between 19,000 and 20,000, not including those employed in the affiliated companies at Eddystone. The company has enough orders for locomotives and repair work in hand to make it assured that the plant will be kept busy for several months to come. About 40 per cent of the locomotive business is represented by foreign orders.

W. D. Cloos, recently elected secretary and treasurer of the Lima Locomotive Corporation, Lima, Ohio, was born August 13, 1886, in Tioga County, Pa. After a preliminary education he entered Mansfield State Normal School, taking a four-year course from 1903 to 1907. Later he attended Mississippi State College,

leaving in 1908. He was connected with the Franklin Railway Supply Company, Franklin, Pa., until his present appointment became effective.

A new company has been formed with a capital of \$400,000 to take over the defunct Nova Scotia Car Works, which were recently sold at auction for \$157,000. The shareholders of the old company have been called to meet in Halifax, when it is expected that a new company will be organized with F. T. McCurdy, M. P., as president. The proposal for raising funds is that old shareholders be given the opportunity of one share of stock in the new company for every six shares held in the old concern.

The Edison Storage Battery Supply Company, Orange, N. J., announces the opening of its Los Angeles office on the fourth floor of the San Fernando building, corner Fourth and Main streets. James F. Rogan, who has been acting as local distributor of Edison storage batteries in Los Angeles, will become resident manager. This company also maintains two other offices on the Pacific Coast, one at 206 First street, San Francisco, in charge of District Manager E. M. Cutting, and another at 65 Columbia street, Seattle, under F. C. Gibson as resident manager.

The Union Metal Products Company, Chicago, has been granted sales rights to the grain tight car sill, which was described in the *Railway Age Gazette*, Mechanical Edition, February, 1914, page 81. This sill is in use on the Rock Island, Minneapolis & St. Louis, and the Denver & Rio Grande. A careful check on 4,000 cars equipped with this sill on the Rock Island, and which have been in service for 15 months, has shown that no claims for grain leakage have been paid, whereas, a check of 3,000 cars not so equipped has shown that claims were paid on 50 per cent of that number.

Charles D. Ettinger, for 45 years connected with the Murphy Varnish Company and president of the Ohio Injector Company of Illinois, died September 4, after a brief illness. Mr. Ettinger was born at Wadsworth, Ohio, June 20, 1838, and during the civil war served in the hospital division of the quartermaster's department. After the war he engaged in the drug business in Findlay, Ohio. In 1871 he moved to Cleveland and took charge of the railroad department of the Murphy Varnish Company, removing to Chicago in January, 1884. Mr. Ettinger was secretary of this company and one of its directors. He partially retired from the activities of business a number of years ago, spending the greater part of his time in developing his farm at Midlothian, Ill. He was a member of the Union League Club, Midlothian Country Club, South Shore Country Club and the Ohio Society of Chicago.



Charles D. Ettinger

The Railway Motor Car Company of America, Chicago, Ill., has acquired a 13-acre plant at Hammond, Ind., fully equipped, in which it will at once begin the manufacture of cars. These cars will be made under patents owned by the company, and will be different in transmission and construction from any cars now in use. It is stated that the section car will constitute a self-contained power plant available for all sorts of track repairs. Later the company will produce unit passenger cars and locomotives, using the same principle of construction. F. A. Lester is vice-president and sales manager, and will have his headquarters in the Westminster building, Chicago, Ill.

D. E. Cain, western manager of the Dearborn Chemical Works, whose death at Denver, Colo., was recently announced, was born September, 1862, in Chicago, Ill., where he received

his early education. He first entered the service of the Chicago & North Western, and in 1881 became connected with the Atchison, Topeka & Santa Fe as cashier at Osage City, Kan. From that time to July, 1902, he was consecutively on this same road as agent at Osage City and Leavenworth, Kan.; chief clerk to general superintendent of machinery at Topeka, Kan.; chief clerk to general manager, and assistant to general manager. From July, 1902, to April, 1905, he was general superintendent of the Western grand division of the same road, with office at La Junta, Colo., and from April to June, 1905, he was general superintendent of the Eastern grand division, with headquarters at Topeka, Kan. In June, 1905, he was appointed general manager of the Southwestern & Choctaw districts of the Chicago, Rock Island & Pacific, with office at Topeka, Kan., from which position he resigned in December, 1906, at the time that the Southwestern & Choctaw districts were placed under the jurisdiction of one general manager. He then became western manager of the Dearborn Chemical Works, having his headquarters at Denver, Colo. He was identified with this concern up to two years ago when ill health overtook him, and he found it necessary to retire from active business. He died in Chicago, Ill., the city of his birth, on August 31, 1916.

The board of directors of the Lima Locomotive Corporation, Lima, Ohio, has elected W. E. Woodard vice-president, in charge of engineering and design, with offices at Lima, Ohio. Mr. Woodard was born in Utica, N. Y., in 1874, and attended the public schools at that place. He was graduated from Cornell University with the degree of mechanical engineer in 1896. For a time he was engaged in the laboratory and on road tests for the Baldwin Locomotive Works, but in 1897 entered the shop and drawing office of the Dickson Locomotive Works as elevation man. In 1900 he went with the Schenectady Locomotive Works, remaining with it and the American Locomotive Company, which succeeded it, up to the time



W. E. Woodard

of his present appointment. While with the American Locomotive Company he was employed in various capacities, including calculator, chief calculator, road testing work, foreman drawing office, assistant mechanical engineer, manager electric locomotive and truck department, and finally as assistant chief engineer, having supervision over the general drawing office at Schenectady, N. Y. Mr. Woodard has patented a number of devices which are extensively used on modern heavy car and locomotive equipment, including the lateral motion driving box and axle, constant resistance engine truck, throttle pipe and lever, plate frame car trucks, car body height adjuster, lateral motion bolster and car and tender trucks. He is a member of the American Society of Mechanical Engineers and the Engineers of Eastern New York.

F. H. B. Paine, William McClellan and H. T. Campion announce the formation of the engineering partnership of Paine, McClellan & Campion, with offices at 25 Church street, New York, and 1420 Chestnut street, Philadelphia. Dr. William McClellan has for many years been interested in steam railroad electrification and has been a most active member of the electrification committee of the New York Railroad Club, serving for part of the time as chairman of the committee. He is best known as a consulting engineer and as the former chief engineer of the New York Public Service Commission for the Second district. He was recently appointed dean of the Wharton School of Finance and Commerce of the University of Pennsylvania. Mr. Paine has specialized as a consulting engineer and counsellor to public utilities companies, in valuations and appraisals, rate making, management and organization, and prob-

lems of intercorporate relations, contracts, etc. Previous to engaging in the consulting engineering business he had an extremely wide experience in electrical engineering and construction and commercial development, both in this country and abroad. Mr. Campion has had the greater part of his engineering experience in Philadelphia, particularly with the Philadelphia Rapid Transit Company, where he specialized more or less in the design and construction of car barns, sub-stations and power houses. In 1905 he took charge of the Philadelphia office of the Re-enforced Cement Construction Company, and in 1907 became associated with Dr. McClellan in the construction and consulting engineering business.

Allied Machinery Company

The Allied Machinery Company, New York, organized for the purpose of marketing American machine tools in Europe, and recently acquired as a subsidiary by the American International Corporation, has elected officers as follows: Chairman of board, Samuel McRoberts; president, R. B. Sheridan; vice-president, Charles E. Carpenter; vice-president and treasurer, R. P. Tinsley; secretary, Ames Higgins. Directors are as follows: G. J. Baldwin, John E. Gardin, Robert F. Herrick, Samuel McRoberts, Oscar E. Stevens, Charles E. Carpenter, J. F. Hartley, W. S. Kies, R. B. Sheridan, R. P. Tinsley. During the past year the business of the company has been exceptionally satisfactory, and plans for an extension of its activities and the development of its sales force abroad are being made. At present the company has branches in France, Russia and Italy.

TRADE PUBLICATIONS

SURVEYING INSTRUMENTS.—Kolesch & Co., New York, have recently issued a catalogue in Spanish covering the line of Kolesch transits and levels for engineers, contractors and others.

OXY-ACETYLENE WELDING AND CUTTING APPARATUS.—The Alexander Milburn Company, Baltimore, Md., has recently issued a 32-page catalogue dealing with its line of oxy-acetylene welding and cutting apparatus. The book shows the advantages of oxy-acetylene apparatus for various kinds of work, and describes the Milburn apparatus and accessories in detail. The catalogue is well illustrated.

STRUCTURAL WATERPROOFING.—The Trus-Con Laboratories, Detroit, Mich., have issued a 52-page booklet explaining the purpose and character of an integral waterproofing with the name Trus-Con Waterproofing Paste (concentrated). This material is furnished in a paste form, and is added to the water used to mix the concrete. It forms a milk-like solution that insures uniformity of mixture. The method of using this material and the advantages to be secured are discussed in detail. The booklet is illustrated with views of many structures in which the material has been used. Part Two is devoted to technical discussions of various phases of the subject of waterproofing.

EXPORTS OF RAILWAY SUPPLIES FROM ENGLAND.—Up to the end of July there had been exported from the United Kingdom during the present year 60,822 tons of rails, chairs, metal ties and other maintenance of way material in iron and steel of the value of \$3,500,000, as compared with material to the value of \$1,000,000 in the first seven months of 1915. Locomotives to the value of \$3,500,000 were exported during the same period as compared with those of the value of \$7,000,000 in the corresponding period of 1915, and passenger cars to the value of \$1,000,000, and freight cars of \$2,000,000, as against \$1,500,000 for passenger cars, and \$3,800,000 for freight cars in 1915.

THE WAY TO HANDLE STRAWBERRY TRAFFIC.—The August issue of the London and North Western Railway Gazette had an interesting article on the strawberry traffic, in which it is noted that Glasgow has had 10,000 baskets in one day from the Hampshire district. Dublin is very fond of strawberries, and it is not unusual for the Irish capital to have 3,000 baskets in one day. In order to avoid injury to the latter in their transshipment at Holyhead, they are packed in vans like those used for registered baggage to the continent, which are lifted bodily off the truck at Holyhead and placed on the deck of the steamer; one truck will carry three of the "lift" vans.

Railway Construction

BELLE FOURCHE & NORTHWESTERN.—Surveys are being made for a new line to be called the Belle Fourche & Northwestern, projected from Belle Fourche, S. D., to Miles City, Mont., 204 miles.

CENTRAL OF GEORGIA.—Under the name of the Chatham River Terminal Company a spur track has been constructed in West Savannah to provide a connection for some of the railroads entering Savannah with the Savannah Warehouse & Compress Company's facilities. (August 11, p. 260.)

KETTLE VALLEY.—This company has opened for business a new district called the Third district, extending from Brookmere, B. C., west to Petain, 56.9 miles.

LINDSAY LUMBER & EXPORT COMPANY (LOGGING ROAD).—This company has awarded a contract to J. N. Gillis & Sons, Brewster, Ala., for the construction of about six miles of logging railroad in the timber lands adjacent to Saraland, Ala.

LOUISVILLE & NASHVILLE.—Contracts have been let to Adams & Sullivan, Louisville, Ky., for the grading, and to the George M. Eady Company for the bridge work, on a line to be built from Hazard, Ky., to Walker's Branch, 1.50 miles. The work includes 50,000 cu. yd. of excavation and 25,000 cu. yd. of fill, and there will be a reinforced concrete bridge of 3 80-ft. spans over the North Fork of the Kentucky river. The line is being built to carry coal from the new mines of the Columbus Coal Mining Company.

NEW YORK SUBWAYS.—Engel & Hevenor, New York City, submitted the lowest bid, at \$229,440, to the New York Public Service Commission, First district, for the installation of tracks on the Seventh avenue branch of the Lexington avenue Rapid Transit Railroad. (September 1, p. 391.)

The New York Public Service Commission, First district, will receive bids on September 28 for the construction of a railroad yard in connection with the White Plains road extension of the first subway. The yard will be located one block east of White Plains Road and will cover an area of several city blocks, beginning at a point a short distance north of Two Hundred and Thirty-ninth street. This yard will occupy about half of the space to be given over to rapid transit railroad yard purposes. The present portion to be constructed will be used for Interborough subway cars, while the eastern portion of the yard will ultimately be built for yardage purposes for cars of the Manhattan elevated lines. The whole space to be occupied by both yards is about 800 ft. by 1,100 ft. There will be storage room for nearly 600 cars in the subway yard, and about 300 cars in the elevated yard. It will be necessary to partially reconstruct the White Plains Road line, between the Neried avenue station and the Two Hundred and Forty-first street terminal station, to avoid a grade crossing for the tracks entering the yard.

NORTH CAROLINA ROADS.—Residents of Goldsboro are interested in a plan to build a railroad from Goldsboro, N. C., south-east to Seven Springs, about 15 miles. G. Norwood, Goldsboro, is said to be interested.

PENNSYLVANIA LINES WEST.—This company is planning to extend its line from Toledo, Ohio, to a point near the city limits of Detroit, Mich., where connection will be made with the Pere Marquette, over which it will run into the Fort street depot. Approximately \$40,000,000 will be used to build this line and a belt road for freight purposes, which will parallel the line of the Detroit Terminal.

SAVANNAH, HINESVILLE & WESTERN.—This company, formerly the Flemington, Hinesville & Western, which operates a line from McIntosh, Ga., northwest to Hinesville, 5.25 miles, is building an extension from Hinesville west to Glennville, 23 miles. Contracts for clearing the right of way and grading will be let in about 30 days. There will be one 40-ft. bridge on the line.

WINCHESTER & WESTERN.—Incorporated in Virginia, it is said, to build a railroad from Winchester, Va., southwest to Wardensville, W. Va., and to Lost River valley, about 40 miles. W. B.

Cornwall, president, and J. S. Zimmerman, secretary, Romney, W. Va.

RAILWAY STRUCTURES

BROWNWOOD, TEX.—The Gulf, Colorado & Santa Fe is planning to construct two large water storage reservoirs and pumping plants in Texas. One will be located near Brownwood, and will have a capacity of 300,000,000 gallons, and the other will be near Sweetwater, and will have a capacity of 290,450,000 gallons.

CARBONDALE, PA.—A contract has been given by the Delaware & Hudson to Porter Brothers for improvements to be carried out in the Carbondale yards. Contract has not yet been let for the proposed steel viaduct to be built at Carbondale.

CHICAGO, ILL.—The Chicago & Alton is developing plans for an entirely new freight terminal east of its existing station at Harrison street, made necessary by the vacation of the old station to make room for the new Union station. The new development will be located largely between the present station and the Chicago river.

LAFAYETTE, IND.—Bids have been received and contracts will be awarded in a few days by the Chicago, Indianapolis & Louisville, for the erection of a new freight house. The building will be of brick construction 50 ft. wide and 200 ft. long, and the part to be used for offices will be two stories high. There will be several team tracks, with a capacity of 35 cars. The paving around and between the tracks, as well as in front of the building itself, will be of vitrified brick. The approximate cost of these improvements is \$35,000.

NORFOLK, VA.—An officer of the Seaboard Air Line is quoted as saying that plans will be made to rebuild a coach shed at Norfolk, which was destroyed by fire.

OKLAHOMA CITY, OKLA.—The St. Louis-San Francisco will construct a 10-stall roundhouse with engine pits and drop pits to cost approximately \$52,000. In addition to this it will install a cinder pit to be operated with a locomotive crane, a machine shop, boiler house and blacksmith shop, car repair shed and a storehouse to cost in the neighborhood of \$58,000, exclusive of machinery, which will involve another \$36,000. It will also install a 50-ft., 150-ton track scale, and lay about 45,000 lineal feet of track. To complete these improvements, which will be done entirely by the company's own forces, will require an expenditure of \$250,000.

PORT COLBORNE, ONT.—The Grand Trunk is making plans for building a new station and freight shed at Port Colborne. The work will probably be carried out by company forces.

POUGHKEEPSIE, N. Y.—A contract has been given to the Wells Brothers Company, New York, by the New York Central for building a passenger station and express building at a point north of Main street in Poughkeepsie. The building will have an elevation of 46 ft. on the east and 72 ft. on the west. It will be 63 ft. wide and 161 ft. long with an express wing 25 ft. by 79 ft. and will be of steel, concrete, brick and stone construction, with tile roof. (May 5, p. 1018.)

ROCHESTER, N. Y.—Plans have been approved by the city engineer, the New York Central and the Buffalo, Rochester & Pittsburgh for a subway to be constructed at Brown street. The work is to be carried out to eliminate a grade crossing, and will cost over \$100,000. Contracts will be let as soon as the plans have been approved by the New York Public Service Commission.

ST. CATHARINES, ONT.—The Grand Trunk is making plans for a new station to be built at St. Catharines. The construction work will probably be carried out by company forces.

TIFTON, GA.—A contract is reported let to Little & Phillips, Cordele, Ga., to build the union station at Tifton for the joint use of the Atlantic Coast Line and the Georgia Southern & Florida. The station will be of brick construction and will cost about \$25,000. (July 28, p. 174.)

TOPEKA, KAN.—The Atchison, Topeka & Santa Fe is adding three stories to its general office building. The structure is 150 ft. long and 75 ft. wide, and when completed will be 13 stories high.

Railway Financial News

BOSTON & MAINE.—This company has defaulted the semi-annual interest due September 1 on its outstanding \$10,000,000 of 4 per cent 20-year plain bonds of 1926. No leased line stock dividends were due on that date, but interest on leased line bonds, including some of the Connecticut River road, was met.

Directors of the Boston & Maine, in a statement to the stockholders, defend the receivership petition, and ask proxies in connection with the special meeting to be held September 19. This meeting has been called in response to a petition from the Minority Stockholders' Protective Association.

CHICAGO, ROCK ISLAND & PACIFIC.—Foreclosure proceedings were filed in the United States District Court by attorneys for the Peabody committee, which represents the refunding bondholders. Members of the Amster reorganization committee declare that they will strenuously oppose the foreclosure bill.

NEW YORK, NEW HAVEN & HARTFORD.—Suit has been brought by five stockholders holding about \$1,200,000 of stock for the recovery of nearly \$300,000,000, alleged to have been squandered by the directors between 1890 and 1914.

PERE MARQUETTE.—The reorganization plan of this company has been approved by the Michigan Railroad Commission.

WABASH-PITTSBURGH TERMINAL.—Federal Judge Charles P. Orr in the U. S. District Court at Pittsburgh has handed down an opinion confirming the sale of the properties, which were purchased by the reorganization committee for \$3,000,000. The action of the court set aside the objections of the Fearon committee, which claimed that the price was inadequate for the property acquired.

WHEELING & LAKE ERIE.—United States Judge Killits withheld his decision on the petition to reduce the price of this road from \$18,500,000 to \$2,000,000. The reduction in price was asked by the New York Trust Company, trustee for the bondholders. The road is in the hands of a receiver named by the federal courts, and a number of efforts to sell it at auction have failed.

DIFFERENCE IN TEMPERATURE CAUSES LOSS OF HEAT.—Loss of heat by radiation varies with the difference in temperature between the steam and the surrounding medium, the insulating quality or low conductivity of the covering and the amount of the exposed area. Variations in detail in different plants vary the monetary loss by radiation, but some idea of the magnitude of this loss in one plant may be gained from the statement that by the proper insulation of a pipe having an area of 65 sq. ft., carrying steam at 150 lb. pressure, with a room temperature of 65 degrees F., the condensation has been reduced from 74.40 to 11.58 lb. per hour. With coal at \$4 per ton, and with an evaporation of 11 lb. of water per pound of coal, this would be equal to a saving of about 50 cents per year for each square foot of pipe.—*Power.*

SHELL V. LOCOMOTIVE MANUFACTURE.—That some concerns have lost money on their attempts to manufacture shells and fuses should have been no surprise. It was common knowledge nine months or more ago that the heads of some concerns had anathematized the day they closed such contracts, not because they considered it unneutral, but because they didn't thoroughly understand the business, and hadn't the skilled staff to supervise it. Some threw up their contracts last fall, when their sample shells were rejected. But that companies of the caliber of the locomotive companies, the electric companies, air brake manufacturers and so on couldn't master the intricacies of shell-making indicates a very low estimate of their industrial intelligence. All these companies face more difficult problems practically every day of their existence. In fact, if one were willing to be convinced, all he had to do was pause before the steam or electric locomotive that hauled his train each day to be satisfied that the difficulties of shell-making were as simple as a b c to designing and constructing a locomotive.—*Wall Street Journal.*